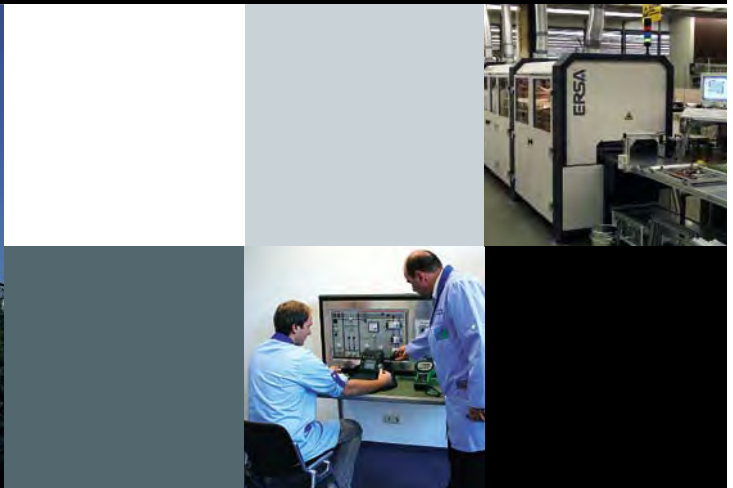


Measuring Instruments and Testers





EDITORIAL

Dear reader,

Thank you for your interest in our products and services covering all aspects of measuring and test technology. Our product range is distinguished by values such as quality, reliability, safety and advanced technology, as well as dynamic design, extremely easy operation and a unique innovative spirit. After all, our measuring and test technology expertise is built into each of our products – and has been for more than 100 years.

Again and again, users tell us that “measuring and test systems from Gossen-Metrawatt are safe, reliable and economic”, and we’re very pleased to hear it because this is precisely what we strive to accomplish, and that’s what differentiates us from the competition. And we’re self-

assured enough to go one step further as well: Gossen-Metrawatt stands for reliability and competence in measuring and test technology.

We’re ready to meet the challenges of future market developments with attractive new products, as well as services, consultation, project engineering, training and on-site assistance.

You get support and competent, personalized advice. This is your guarantee of a customer-oriented sales network with highly qualified sales engineers.

We’ve grown together with you over a period of many decades, and have always striven to align ourselves to your requirements

You can count on us!





CAT	Description	Application
CAT I	Measurements in electrical circuits which are not directly connected to the mains	For example batteries etc.
CAT II	Measurements in electrical circuits which are directly connected to the low-voltage mains	Via plug, e.g. in household, office and laboratory applications
CAT III	Measurements in building installations	Stationary consumers, distributor terminals, devices connected permanently to the distributor
CAT IV	Measurements at power sources for low-voltage installations	Meters, mains terminals, primary overvoltage protection devices

With regard to multimeters and test instruments, the CE declaration of conformity confirms that European regulations (low-voltage directive and EMC directive) are adhered to.

The CE declaration is a prerequisite for putting products into circulation within the European Community. Adherence is substantiated by fulfilling the following standards: IEC 61010-1 (international), EN 61010-1 (German version) and VDE classification VDE 0411-1.

Safety requirements for electrical equipment for measurement, control and laboratory use are described in this standard. The IEC standard was first issued in 1990.

After various amendments and addenda (A1 1992, A2 1995), the most recent revision (the so-called second edition issued in 2001) has come into force. This revision level has been adopted into the second issue of the German version: EN 61010-1. The currently valid revision level is 8/2002.

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*** Camille Bauer**

Further information regarding products for the fields of **heavy-current engineering, rotation angle measurement and process metrology** can

be found in the catalogs issued by Camille Bauer AG, or at:

www.camillebauer.com and www.gossenmetrawatt.com

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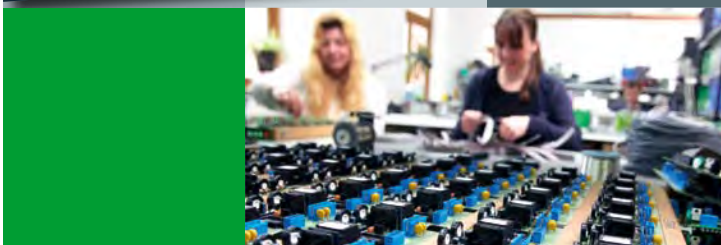
MULTIMETER

A multimeter is an electronic measuring instrument that combines several measurement functions into a single unit, and is used primarily to measure electrical quantities.

To measure means to compare a known quantity with an unknown quantity. The standards of measure of the PTB in Brunswick (German Federal Institute of Physics and Metrology) are used as comparative quantities for our multi-

eters. This is confirmed by means of a DKD calibration certificate.

Multimeters included in the METRAHIT series are rugged, reliable digital multimeters with housings made of impact resistant plastic, and are equipped with unique, patented automatic blocking sockets (ABS). The devices feature a new design and are equipped with state-of-the-art technology and safety.



A Series

4½ Place TRMS Digital Multimeter for Professional Use with a Resolution of 12,000 Digits

Scope of delivery, A series:

- DKD calibration certificate
- KS17-2 measurement cable set
- Rubber holster
- Two 1.5 (AA) batteries

- Set METRAHIT I Pro (M242D): in HC20 case with WZ12A AC current clamp



TRMS AC	TRMS AC+DC	600V CAT IV	1000V CAT III	AUTO/MAN RANGE	10MΩ	V AC, DC, AC+DC	ABS
BARGRAPH	DATA MIN/MAX	DKD-K 19701					

Our TOP MODEL

METRAHIT I BASE

Article: M241A

Multimeters with high-impedance measuring inputs without direct measurement of current, e.g. for use in the field of energy technology at power utilities

METRAHIT I PRO

Article: M242A

Multimeter with low-pass filter and low-impedance voltage input, e.g. for measurements at frequency converters

METRAHIT I TECH

Article: M243A

Multimeter with optimized current ranges, e.g. for measurements at measuring transducers in the process industry

METRAHIT I XTRA

Article: M240A

System multimeter with data logger, IR interface and power pack socket for use in combination with PCs

Function	BASE	PRO	TECH	XTRA
Clip function	■	—	■	—
Frequency measurement	100 kHz	100 kHz	100 kHz	1 MHz
Duty cycle	—	—	—	■
Temperature	TC	TC	TC	TC + RTD
Power pack socket	—	—	—	■
IR interface	—	—	—	■
Data logger	—	—	—	■
L ₀ voltage with low-pass filter	—	■	■	■
Rubber holster	Optional	Optional	Optional	■
HC 20 case	—	—	—	—
TRMS bandwidth (V _{AC})	1 kHz	10 kHz	10 kHz	20 kHz
TRMS current measurement	—	1 A/10 A	10 mA/100 mA/1 A/10 A	100 μA... 10 A
Capacitance measurement	—	—	—	—
Resolution	12,000	12,000	12,000	12,000



E Series

4½ Place High-End TRMS Digital Multimeter, System Compatible with IR Interface – Resolution: 60,000 Digits

Lieferumfang E-Series:

- KS17-2 measurement cable set
- Two 1.5 V AA batteries
- DKD calibration certificate
- Rubber holster
- Set with HC20 hard case



Our TOP MODEL

TRMS AC	TRMS AC+DC	600V CAT IV	1000V CAT III	AUTO/MAN RANGE	10MΩ	V AC,DC, AC+DC	ABS
BARGRAPH	DATA MIN/MAX	IR	Speaker	CLIP	Wiring	A AC,DC, AC+DC	

METRAHIT EBASE

Article: M251A

Same applications at the BASE but with higher resolution and system interface

METRAHIT ESPECIAL

Article: M252A

Special multimeter for connection to current transformers without fuses, in order to eliminate danger resulting from interruption of the transformer circuits

METRAHIT ETECH

Article: M253A

Same applications at the Tech but with higher resolution and system compatible thanks to IR interface

METRAHIT EXTRA

Article: M250A

Same as XTRA with larger data memory, higher resolution and Vac bandwidth up to 100 kHz

EBASE	ESPECIAL	ETECH	EXTRA	Function
■	■	■	■	Clip function
300 kHz	300 kHz	300 kHz	1 MHz	Frequency measurement
—	—	—	■	Duty cycle
TC	TC	TC/RTD	TC/RTD	Temperature
—	—	—	■	Power pack socket
■	■	■	■	IR interface
—	—	—	■	Data logger
—	■	■	■	L ₀ voltage with low-pass filter
■	■	■	■	Rubber holster
■	■	■	■	HC 20 case
1 kHz	20 kHz	20 kHz	100 kHz	TRMS bandwidth (V _{AC})
—	6A/10A	30mA/600mA/6A/10A	600µA... 10A	TRMS current measurement
—	—	■	■	Capacitance measurement
60,000	60,000	60,000	60,000	Resolution

METRAHIT | OUTDOOR

Article: M2400



The OUTDOOR multimeter has been specially designed and manufactured to meet the challenges faced by engineers and technicians in adverse environments.

It's extremely rugged, impact-resistant, water-proof and dust-proof, and is resistant to extreme temperatures.

Technology and scope of functions are the same as with the METRAHIT X-TRA.

- Special rugged design with shock and impact resistant housing

- Additional rubber holster
- Special "sand" color
- IP 65 protection: dust-proof / water jets
- Patented, sealed blocking sockets
- Plus additional functions as included with the METRAHIT XTRA

Scope of delivery:

- KS17-2 measurement cable set
- Rubber holster
- Two 1.5 V (AA) batteries
- DKD calibration certificate



TRMS AC	TRMS AC+DC	TRMS 20kHz	600V CAT IV	1000V CAT III	DATA MIN/MAX	DATA LOGGER	IR	IP65
12000 Digits	BARGRAPH		ABS		AUTO/MAN RANGE			MHz
V AC,DC, AC+DC	A AC,DC, AC+DC	FIL 1kHz	LoV 1MΩ	TC/RTD		40MΩ		

METRAHIT | 30M Article: M230B



6½ Place Precision TRMS Multimeter, Temperature Measuring Instrument and Data Logger for Demanding, Universal Applications in the Lab and for Service Calls

- Display: ± 1,200,000 digits
- Intrinsic error ± (35 ppm of measured value + 70 ppm)
- Resistance and temperature measurement with 4-wire Kelvin connection
- Min-Max measured value storage
- Automatic range selection and battery cutoff

- PTC fuse, max. 250V
- Integrated 128 kB measurement data memory, sampling interval: 0.1 s – 10 min.
- Power pack (optional)
- CAT III at 300 V bzw. CAT II at 600V per IEC 61010-1

Scope of delivery:

- KS17-2 measurement cable set
- Rubber holster
- Two 1.5V AA batteries
- DKD calibration certificate

TRMS AC+DC	TRMS 100Hz	V DC, AC+DC	A DC, AC+DC	40MΩ	kHz	TC/RTD
	DKD-K 19701				AUTO/MAN RANGE	DATA MIN/MAX



METRAHIT | ENERGY

Article: M249A



Multimeter with power and energy measurement, e.g. for ascertaining energy consumption in standby mode for consumer electronics, communications and IT devices, as well as household appliances such as refrigerators etc., plus a single-phase mains quality measuring instrument (PowerQuality tool).

Scope of delivery:

- KS29 measurement cable set
- Rubber holster
- Two 1.5 V (AA) batteries
- DKD calibration certificate



TRMS AC	TRMS AC+DC	TRMS 100kHz	300V CAT IV	600V CAT III	DATA MIN/MAX	DATA LOGGER	IR
60000 Digits	0000 0000		ABS		AUTO/MAN RANGE		
V AC,DC, AC+DC	A AC,DC, AC+DC	FIL 1kHz	LoV 1MΩ	TC/RTD		CLIP	40MΩ
MHz	%	dB	RPM			W	PQ

METRAport | 40S Article: M234D

4¾ Place Folding Digital Multimeter for Universal Use in General Electrical and Electronics Applications, as well as for Automotive Service

Scope of delivery:

- KS17 measurement cable set
- Two 1.5V AA batteries
- Carrying strap
- DKD calibration certificate



TRMS AC	TRMS AC+DC	TRMS 20kHz	300V CAT II	DKD-K 19701	DATA MIN/MAX	
12000 Digits	BARGRAPH		AUTO/MAN RANGE		AUTO Fuse	CLIP
V AC,DC	A AC,DC	300kΩ		TC/RTD		
kHz	%	RPM				





METRAHIT I 2+ Article: M205A

3^{6/7} Place Universal TRMS Digital Multimeter with Analog Scale for Use in All Areas of Electrical Engineering



TRMS AC	TRMS AC+DC	TRMS 1kHz	600V CAT III	TC	DATA MIN/MAX	6000 Digits	BARGRAPH	
ABS	AUTO/MAN RANGE	V AC,DC, AC+DC	A AC,DC, AC+DC	40MΩ				DKD-K 19701



METRAHIT I WORLD Article: M206A

3^{6/7} Place Universal Digital Multimeter with Analog Scale for Use in All Areas of Electrical Engineering, Especially at the International Level



TRMS AC	TRMS AC+DC	TRMS 2kHz	600V CAT IV	1000V CAT III	TC	AUTO/MAN RANGE		
40MΩ		Hz	%	RPM	V AC,DC, AC+DC	A AC,DC, AC+DC	IR	ABS
	BARGRAPH	DATA MIN/MAX	DKD-K 19701	6000 Digits				



METRAMAX I 12 Article: M212A / M212D (set)

Inexpensive Handheld Digital-Analog Multimeter for Use in the Fields of General Electronics and Electrical Engineering

Scope of delivery:

- KS17-2 measurement cable set
- Two 1.5 V (AA) batteries
- Rubber holster

- Switchable input resistance: 10 MΩ/400 kΩ
- Case with tilt stand and take-up reel
- Dimensions (W x H x D): 92 x 154 x 25 mm
- Weight: approx. 0.2 gr. with batteries
- Manufacturers guarantee: 3 years material and workmanship

METRAMAX I 12 Set (article: M212D):

- With HC20 case and WZ12A current clamp



METRAMAX I 12 Set

300V CAT III	600V CAT II	DATA MIN/MAX	AUTO/MAN RANGE	000000 Digits	BARGRAPH	V AC,DC	A AC,DC	40MΩ
		LoV 40kΩ		Hz				



METRAport 3A Article: M113A

Folding analog multimeter for demanding applications with analog display and 46 measuring ranges for universal use in process engineering, electronics and electrical applications, testing, R&D, service and training in accordance with EN 61010-1/DIN VDE 0411, part 1

- For measurement of voltage, current, resistance and level
- With reflective scale
- High input resistance of 10 MΩ for no-load voltage measurement

- Automatic battery cutoff when instrument is folded closed
- Overload protection in all ranges: 250V~ (except for 10A range)
- 9 voltage measuring ranges: 100 mV ... 600V
- 9 level measuring ranges
- 7 current measuring ranges: 10 mA ... 10A
- 5 resistance measuring ranges: 1 Ω ... 20 MΩ
- Scale can be tilted with folding lid which also provides protection during transport



Scope of delivery:

- KS17 measurement cable set
- 9V flat cell battery per IEC 6LR61
- Carrying strap

	Klasse 2,5	500V CAT II		
V AC,DC	A AC,DC	1MΩ		

METRAmax 2 Article: M102A

The analog multimeter was developed in cooperation with a renowned German training systems manufacturer and fulfills requirements for instruction and vocational education. It's suitable for balancing, and inspection work as well.

- Voltage measurement: 100 mV...300V
- Current measurement: 100 mA...3 A
- Zero point can be set to left or center
- Outstanding overload capacity
- Automatic battery cutoff
- Dimensions (WxHxD): 100 x 140 x 35 mm
- Weight: approx. 0.3 kg with battery



Scope of delivery:

- Multimeter

	Klasse 2=3~	300V CAT II	V AC,DC	A AC,DC
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METRAmax 3 Article: M103A

Analog Multimeter for Training Applications, and for Use in the Electrical Trades. Overload protection with integrated auto-fuse and high performance PTC thermistors.

- Voltage measurement: 30 ... 600V
- Current measurement: 0.3V ... 15A
- Protective conductor
- Dimensions (WxHxD): 100 x 140 x 35 mm
- Weight: approx. 0.3 kg with battery



Scope of delivery:

- Multimeter
- One 1.5V AA battery

	Klasse 2,5	600V CAT II	300V CAT III	
V AC,DC	A AC,DC	300kΩ		

METRAmax 6

Article: GTM3060000R001

Resistance Measuring Instrument with Analog Display for use in the Plant, on Service Calls and for Installation Work

- Measuring method: current measurement
- Rugged, moving-coil mechanism with spring loaded bearings
- Integrated buzzer for continuity testing
- Allows for use under adverse operating conditions
- Dimensions: 100 x 140 x 35 mm
- Weight: approx. 0.3 kg without battery



Scope of delivery:

- Multimeter
- One 1.5 VAA battery

	Klasse 1,5	300kΩ	
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METRAHIT 1A / 2A Article M100A / M101A

Compact, Basic Analog Multimeter for Training and Hobby, and for Electrical Applications

- Dimensions (WxHxD): 92 x 126 x 45 mm
- Weight: approx. 0.25 kg without battery
- Battery: 1.5V, IEC LR 6 (AA mignon)
- Manufacturers guarantee: 1 year material and workmanship

Scope of delivery:

- 9 V flat cell battery per IEC 6LR61



	Klasse 2,5	500V CAT II		V AC,DC	A AC,DC	1MΩ	
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METRACAL | MC Article: M245A



Our TOP MODEL

Calibration and Measurement: Efficient and Time-Saving thanks to Simulation

The new, extremely cost-effective METRACAL MC multi-functional process calibrator is distinguished by its ruggedness, easy handling, outstanding functionality, accuracy and PC systems compatibility.

The METRACAL MC streamlines measuring, calibration and inspection work for chemical processes, in the lab and in R&D, for the production of electronic measuring transducers and when balancing and calibrating metrology components.

The integrated multimeter and calibrator make it possible for measuring technicians to simulate sensor conditions at the inputs of transducers, transmitters and buffer amplifiers, and at the same time to accurately measure the electrically isolated signal output, and to save results to memory on-site.

The instrument is equipped with a bidirectional infrared interface for subsequent documentation of test results at a PC, and for the transmission of stored measured values.

The measuring, simulation and calibrating functions are very comprehensive and include current (mA), voltage (mV, V), resistance (0 to 2000 Ω), pulse count and frequency (Hz), as well as temperature measurement and simulation of resistance temperature detectors (Pt100, Pt1000, Ni100, Ni 1000) and thermocouples (J, K, T, L, R, B, S, E, U, N), which can be displayed as desired in °C or °F.

The calibration and measuring functions can be scaled as electrical quantities, or as percentage values of an adjustable measuring span.

In this way, error can be elegantly indicated as a percentage at the high contrast LCD without any additional tools.



Display illumination and multiple display, e.g. functions and output value or measurement and simulation values etc.



Separate battery and fuse compartments



Connection for external power pack and continuous, battery-free power supply

- Universal calibrator, simulator and multimeter for mA/mV...V/°C (Pt100/1000, Ni100/1000, thermocouples: J, L, T, U, K, E, S, R, B, N/ 30...2000 Ω)
- Dual mode – simultaneous calibration and measurement (U/I)
- TRMS AC measurement to 1 kHz
- Measurement and simulation in absolute terms and as percentages (scaled)
- Memory for measurement results: 2 MB

- Frequency and pulse run generators: 1 Hz to 2 kHz
- Ramp and staircase functions
- METRAwin® 90-2 calibration software (optional)
- Transmitter simulator (sink: 0 to 24 mA)
- DKD calibration certificate included
- Rugged, EMC compliant design

Scope of delivery:

- KS29 measurement cable set
- Rubber holster with carrying strap
- Two 1.5 V AA batteries
- DKD calibration certificate



METRAHIT CAL / CAL Pack Article: M244A / M244B

Multifunctional Calibrator for Process Engineering – 18 Calibrator Functions. The newly developed calibrator can be used for generating and simulating a broad range of electronic quantities, and also covers 10 different thermocouples and 4 resistance temperature sensors. Its outstanding accuracy and rugged design make the METRAHIT CAL a high performance tool for use in the workshop and the lab.

- Simulation function for voltage, resistance and frequency
- Current source and sink, especially for process quantities, for example 0 ... 20 mA
- Temperature simulation for resistance thermometers and thermocouples
- Simple adjustment of values with function keys and entry field
- Interval functions, ramp functions and procedures. Automated sequences with adjustable time quantities can be generated for all simulation quantities.

- Infrared interface for data exchange and parameters configuration with a PC (optionally available IR-USB adapter and software)
- Handheld, battery powered instrument for use directly on-site and with additional mains connection for continuous operation

Scope of delivery:

- KS17-2 measurement cable set
- Rubber holster with carrying strap
- Two 1.5V AA batteries
- DKD calibration certificate

Scope of delivery METRAHIT CAL Pack:

- Handheld calibrator with rubber holster
- METRAHIT X-TRA with rubber holster
- Measurement cable sets and batteries
- HC30 hard case
- DKD calibration certificate



i More information at: www.gossenmetrawatt.com



METRAHIT 1ASi Article: M235H

The handy, rugged addressing and diagnosis tool for initial start-up, maintenance and service of ASi systems offers the following functions:

- Read-out of slave addresses 0 through 31, and A and B, without scrolling including clear-cut, full LCD
- Read-out of slave IO and ID codes (including extended ID codes 1 and 2)
- Standard addressing mode and extended addressing mode per ASi version 2.1
- Programmable ID code 1
- Function test for slaves, including analog slaves with profile 7.2 (7.3 in preparation)
- Recognition of complete arrays of system components
- Storage, diagnostics and PC gateway functions
- Connection with jack plugs

- Data transmission and management, as well as documentation of system parameters with optional software

Scope of delivery:

- ASi addressing device and tester
- Rubber holster with carrying strap
- Connector cable set, M12 to jack plug
- Z236A addressing cable
- Z231G module base with addressing socket
- 4 batteries per IEC LR6

Type	Article number
METRAHIT 1ASi	M235H
Module base	Z231G
HC20	Z113A



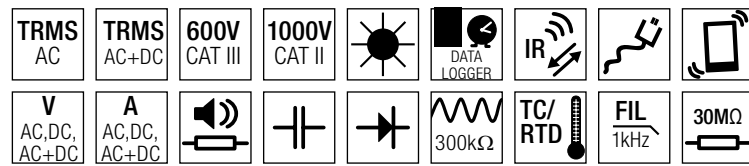


METRAHIT ISO Article M246B



4 3/4 Place Multimeter and Insulation Tester for Service Applications for Measuring and Testing Industrial Trucks, Household Appliances and other Applications – Resolution: 30,000 Digits – 26 Multimeter Functions

- 1 kHz low-pass filter can be activated for measurement of V AC
 - Current measurement: bandwidth up to 2 kHz
 - Voltage measurement: bandwidth up to 10 kHz
 - Insulation resistance measurement with adjustable test voltage (50, 100, 250, 500 and 1000 V) and detection of interference voltage
 - Data logger function with 512 kB data memory for up to 15,400 measured values
- Scope of delivery:**
- KS17-2 measurement cable set
 - Two 1.5 V AA batteries
 - DKD calibration certificate



METRAHIT ISO@AERO and AERO MASTER TEST KIT

Article: M246M / M246N / Z246A



Special version for avionics services with special low-voltage insulation measurement and data hold function.

Avionics service case with special test and measuring accessories for aviation technology, consisting of measurement cables, terminals, adapters and sockets for MIL plug connectors in a waterproof, pressure-tight hard case.

Scope of delivery ISO@AERO (M246M) same as ISO

- Additionally includes power pack with broad range input: 90 to 250V, 50/60Hz

Scope of delivery, AERO Master Test Kit I (Z246A)

- 68 piece set of special measuring and test accessories for aviation

Scope of delivery, AERO Master Test Kit II (M246N)

- AVIONIC service case including METRAHIT ISO@AERO

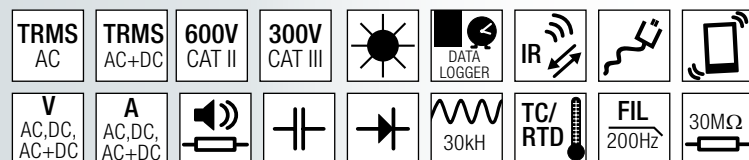


METRAHIT T-COM / T-COM PLUS Article: M246A / M246S



3 3/4 Place Telecommunications Multimeter for Measurements in Symmetrical Copper Cable Networks – System Compatible with Data Memory and IR Interface – 22 or 25 Multimeter Functions

- Insulation resistance measurement (test voltage T-COM: 100 V T-COM plus: 10V/100 V)
 - Detection of extraneous voltage, error detection and reversible polarity
 - Cable symmetry testing by means of rapid terminal switching: a – b – E
 - 200 Hz low-pass filter can be activated for measurement of V AC
 - Analog display, linear or logarithmic for insulation measurement
 - Measurement of cable length with adjustable cable parameters
 - Low-resistance measurement (contact coils) R_{SL} with a test current of 2 mA
 - T-COM plus: signature measurement
- Scope of delivery:**
- KS21-T measurement cable set
 - Two 1.5 V AA batteries
 - DKD calibration certificate





METRAHIT 27M Article: M227A

Milliohmmeter, 4¼ Place Multimeter and Data Logger, Temperature Measuring Instrument for On-Site Service and for Laboratory Tasks:

- General low-value resistance measurements
- Measurement of low value contact resistances at welding seams and riveted joints
- Determination of low value contact resistances on aircraft outer skins (lightning protection and wick test)

- Milliohmmeter: 3.000 mΩ ... 300.00 mΩ with 1 A measuring current and 30.00 mΩ ... 30.00 Ω with 200 mA measuring current
- Kelvin connection (4-wire measurement)
- Voltage measurement: 3 V ... 600 V DC and 3 V ... 600 V AC with ±30,000 digits
- Resistance measurement: 300 Ω ... 30 MΩ
- Frequency measurement: 300 Hz...3 kHz
- DATA hold memory for up to 1200 measured values
- Continuity and diode testing, overload protection

Scope of delivery:

- KS17-2 measurement cable set
- Three rechargeable NiMH batteries
- DKD calibration certificate



METRAHIT 27I / 27AS Article: M227B/M227C

Insulation Resistance Tester, Milliohmmeter, 4¼ Place Multimeter and Data Logger. In addition to a milliohmmeter, an insulation tester has been integrated for measurements up into the gigaohm range. Where service and repairs in the field of aviation technology are involved, the instrument can be used in a broad range of applications.

- Insulation resistance measurement: 30.00 MΩ ... 3.000 GΩ with selectable test voltages of 50, 100, 250 and 500 V
- Milliohmmeter: 3.000 mΩ ... 300.00 mΩ with 1 A measuring current and 30.00 mΩ ... 30.00 Ω with 200 mA measuring current
- Kelvin Connection (4-wire measurement)
- Voltage measurement: 3 V ... 600 V DC and 3 V ... 600 V AC with ±30,000 digits
- Continuity and diode testing
- Overload protection
- LCD panel with background illumination

Scope of delivery:

- KS17-s measurement cable set
- Three AA rechargeable NiMH batteries
- NA HIT 2x charger
- KC4 set of Kelvin clips (2 pieces)
- DKD calibration certificate

Additionally included in Avionic-Set Article: M227C)

- KC27 set of Kelvin probes (2 pieces)
- HC30 hard case
- USB pack (USB cable, CD ROM with drivers, METRA-win 10/METRAHIT software)





METRAHIT 27EX Article: M227F

4¼ Place Milliohmmeter for Potentially Explosive Atmospheres – for measuring low-value contact resistance in explosive atmospheres, e.g. at contacts inside aircraft fuel tanks (bonding test), as well as for general low-value resistance measurements inside and outside of potentially explosive atmospheres, for example on aircraft outer skins (lightning protection and wick test)

- Measuring ranges: 30 mΩ, 300 mΩ, 3 Ω, 30 Ω
- Resolution: 10 μΩ
- DATA hold memory: 1200 measured values
- Prototype test certificate: INERIS 05ATEX0040
- Ex designation: Ex II 2 G EEx ia IIA T4
- KC4 Kelvin clip (1 piece)
- HC30 hard case
- DKD calibration certificate
- Ex certificate: INERIS 05ATEX00401





Scope of delivery:

- 8 Ex approved rechargeable NiMH batteries
- KC27 Kelvin probe (1 piece)
- Special variant for AIRBUS: M227G with AIRBUS logo, ID no. 97F92003500 per AMM

METRAHIT	BASE	EBASE	PRO	ESPECIAL	TECH	ETECH
						
DC voltage measurement	10 μ V ... 1000 V		10 μ V ... 1000 V		10 μ V ... 1000 V	
Intrinsic error for V DC	$\pm 0.05\%$ rdg. + 3 d		$\pm 0.05\%$ rdg. + 3 d		$\pm 0.05\%$ rdg. + 3 d	
AC voltage measurement	10 μ V ... 1000 V		10 μ V ... 1000 V		10 μ V ... 1000 V	
Intrinsic error for V AC	$\pm 0.5\%$ rdg. + 9 d		$\pm 0.5\%$ rdg. + 9 d		$\pm 0.5\%$ rdg. + 9 d	
TRMS V	AC, AC+DC		AC, AC+DC		AC, AC+DC	
DC current measurement	With clamp		0.1 mA ... 10 A		1 μ A ... 10 A	
Intrinsic error, DC	—		$\pm 0.9\%$ rdg. + 5 d		$\pm 0.5\%$ rdg. + 5 d	
AC current measurement	With clamp		0.1 mA ... 10 A		1 μ A ... 10 A (16A)	
Intrinsic error, AC	—		$\pm 1.5\%$ rdg. + 30 d		$\pm 1.5\%$ rdg. + 30 d	
TRMS A	AC, AC+DC		AC, AC+DC		AC, AC+DC	
Resistance measurement	0.01 Ω ... 40 M Ω		0.01 Ω ... 40 M Ω		0.01 Ω ... 40 M Ω	
Intrinsic error, resistance	$\pm 0.2\%$ rdg. + 5 d		$\pm 0.2\%$ rdg. + 5 d		$\pm 0.2\%$ rdg. + 5 d	
4-wire milliohm measurement	—		—		—	
Power and energy measurement	—		—		—	
Mains quality	—		—		—	
Capacitance measurement	—		—		10 pF...1000 μ F	
Intrinsic error, capacitance	—		—		$\pm 1\%$ rdg. + 6 d	
Temperature measurement, Pt100/1000	—		—		-200...+850	
Thermocouple (type)	-250° ... +1372° (K)		-250° ... +1372° (K)		-250° ... +1372° (K)	
Continuity testing	■		■		■	
Diode test	5.1 V		5.1 V		5.1 V	
Frequency measurement	0.01 Hz ... 100 kHz		0.01 Hz ... 100 kHz		0.01 Hz ... 100 kHz	
Level measurement (dB)	—		■		—	
DATA / MIN-MAX storage	■		■		■	
Data storage (measured values)	—		—		—	
Analog display, 35/36 scale graduations	■		■		■	
Digital display (places/digits)	4½ = 12,000 d	4⅔ = 60,000 D	4½ = 12,000 D	4⅔ = 60,000 D	4½ = 12,000 D	4⅔ = 60,000 D
Display illumination	■		■		■	
Measurements per second	40 analog / 10 digital		40 analog / 10 digital		40 analog / 10 digital	
Bandwidth	1 kHz		10 kHz	20 kHz	10 kHz	20 kHz
Interface	—		IR		—	
Automatic blocking sockets	■		■		■	
Measuring category	CAT III / 1000 V CAT IV / 600 V		CAT III / 1000 V CAT IV / 600 V	CAT II / 600 V	CAT III / 1000 V CAT IV / 600 V	
Calibration certificate	DKD		DKD		DKD	
Weight with batteries	395 g		395 g		395 g	
Batteries / operating hours	2 ea. 1.5 V / 200		2 ea. 1.5 V / 200		2 ea. 1.5 V / 200	
Dimensions in mm (W X H X D)	89 x 199 x 43		89 x 199 x 43		89 x 199 x 43	
Protection	IP 52		IP 52		IP 52	
Approvals and certificates	CE, VDE-GS	CE	CE, VDE-GS	CE	CE, VDE-GS	CE
Accessories / included	Cable sets	KS, HC20, GH	Cable sets	KS, HC20, GH	Cable sets	KS, HC20, GH
Software option	—		METRAwin10		—	
Article number	M241A	M251A	M242A	M252A	M243A	M253A



X-TRA		EXTRA		30M		ENERGY		OUTDOOR		SECULIFE		METRAHIT	
10 µV... 1000V		0.1 µV... 600 V		0.1 µV... 600V		10 µV... 1000V		10 µV... 1000V		10 µV... 1000V		DC voltage measurement	
± 0.05% rdg. + 3 d		± 0.003% rdg. + 3 d		± 0.02% rdg. + 15 d		± 0.05% rdg. + 3 d		± 0.05% rdg. + 3 d		± 0.05% rdg. + 3 d		Intrinsic error for V DC	
10 µV... 1000V		1 µV... 600V		1 µV... 600V		10 µV... 1000V		10 µV... 1000V		10 µV... 1000V		AC voltage measurement	
± 0.5% rdg. + 9 d		± 0.08% rdg. + 5 d		± 0.2% rdg. + 30 d		± 0.5% rdg. + 9 d		± 0.5% rdg. + 9 d		± 0.5% rdg. + 9 d		Intrinsic error for V AC	
AC, AC + DC		AC + DC		AC, AC + DC		AC, AC + DC		AC, AC + DC		AC, AC + DC		TRMS V	
10 nA... 10 A		100 pA... 120 mA		10 µA... 10 A		10 nA... 10 A		10 nA... 10 A		10 nA... 10 A		DC current measurement	
± 0.5% rdg. + 5 d		± 0.02 % rdg. + 5 d		± 0.05 % rdg. + 20 d		± 0.5% rdg. + 5 d		± 0.5% rdg. + 5 d		± 0.5% rdg. + 5 d		Intrinsic error, DC	
10 nA... 10 A		1 nA... 120 mA		10 µA... 10 A		10 nA... 10 A		10 nA... 10 A		10 nA... 10 A		AC current measurement	
± 1.5 % rdg. + 30 d		± 0.1% rdg. + 5 d		± 0.5% rdg. + 25 d		± 1.5 % rdg. + 30 d		± 1.5 % rdg. + 30 d		± 1.5 % rdg. + 30 d		Intrinsic error, AC	
AC, AC + DC		AC + DC		AC, AC + DC		AC, AC + DC		AC, AC + DC		AC, AC + DC		TRMS A	
0.01 Ω ... 40 MΩ		0.1 mΩ ... 12 MΩ		10 mΩ ... 60 MΩ		0.01 Ω ... 40 MΩ		0.01 Ω ... 40 MΩ		0.01 Ω ... 40 MΩ		Resistance measurement	
± 0.2% rdg. + 5 d		± 0.005% rdg. + 5 d		± 0.1% rdg. + 5 d		± 0.2% rdg. + 5 d		± 0.2% rdg. + 5 d		± 0.2% rdg. + 5 d		Intrinsic error, resistance	
—		0.1 mΩ ... 30 Ω		—		—		—		—		4-wire milliohm measurement	
—		—		■		—		—		—		Power and energy measurement	
—		—		■		—		—		—		Mains quality	
10 pF...1000 µF		—		10 pF...600 µF		10 pF...1000 µF		10 pF...1000 µF		10 pF...1000 µF		Capacitance measurement	
± 1% rdg. + 6 d		—		± 1% rdg. + 6 d		± 1% rdg. + 6 d		± 1% rdg. + 6 d		± 1% rdg. + 6 d		Intrinsic error, capacitance	
-200° ... +850°		—		-200° ... +850°		-200° ... +850°		-200° ... +850°		-200° ... +850°		Temperature measurement, Pt100/1000	
-250° ... +1372° (K)		-270° ... +1372° (J, K)		-260° ... +1372° (J, K)		-250° ... +1372° (K)		-250° ... +1372° (K)		-250° ... +1372° (K)		Thermocouple (type)	
■		■		■		■		■		■		Continuity testing	
5.1 V		5.1 V		6.0 V		5.1 V		5.1 V		5.1 V		Diode test	
0.001 Hz... 1 MHz		0.01 Hz... 100 kHz		0.01 Hz... 1 MHz		0.001 Hz... 1 MHz		0.001 Hz... 1 MHz		0.001 Hz... 1 MHz		Frequency measurement	
—		■		■		—		—		—		Level measurement (dB)	
■		■		■		■		■		■		DATA / MIN-MAX storage	
540 kB (15,400)		2048 kB (61,600)		30 000		300 000		540 kB (15,400)		540 kB (15,400)		Data storage (measured values)	
■		■		■		Triple		■		■		Analog display, 35/36 scale graduations	
4½ = 12,000 d		4⅔ = 60,000 d		6½ = 1,200,000 d		60 000		4½ = 12,000 d		4½ = 12,000 d		Digital display (places/digits)	
■		■		■		■		■		■		Display illumination	
40 analog / 10 digital		1 digital		40 analog / 10 digital		40 analog / 10 digital		40 analog / 10 digital		40 analog / 10 digital		Measurements per second	
20 kHz		100 kHz		10 kHz		100 kHz		20 kHz		20 kHz		Bandwidth	
IR		IR		IR		IR		IR		IR		Interface	
■		—		■		■		■		■		Automatic blocking sockets	
CAT III / 1000 V CAT IV / 600 V		CAT II / 600 V		CAT III / 600 V CAT IV / 300 V		CAT III / 1000 V CAT IV / 600 V		CAT III / 1000 V CAT IV / 600 V		CAT III / 1000 V CAT IV / 600 V		Measuring category	
DKD		DKD		DKD		DKD		DKD		DKD		Calibration certificate	
395 g.		350 g		400 g		395 g.		395 g.		395 g.		Weight with batteries	
2 ea. 1.5 V / 200		2 ea. 1.5 V / 200		2 ea. 1.5 V / 200		2 ea. 1.5 V / 200		2 ea. 1.5 V / 200		2 ea. 1.5 V / 200		Batteries / operating hours	
89 x 199 x 43		84 x 195 x 35		89 x 199 x 43		89 x 199 x 43		89 x 199 x 43		89 x 199 x 43		Dimensions in mm (W X H X D)	
IP 52		IP 42		IP 52		IP 65		IP 65		IP 65		Protection	
CE, VDE-GS		CE		CE		CE		CE		CE		Approvals and certificates	
Cable sets, GH		KS, HC20, GH		Cable sets, GH		Cable sets, GH		Cable sets, GH		KS, HC20, GH		Accessories / included	
METRAwin10		METRAwin10		METRAwin10		METRAwin10		METRAwin10		METRAwin10		Software option	
M240A		M250A		M230B		M249A		M2400		M687A		Article number	

METRAHIT	2plus	WORLD	METRAmax12	METRAport 40S
				
DC voltage measurement	100 μ V ... 600 V	100 μ V ... 1000 V	100 μ V ... 600 V	10 μ V ... 600 V
Intrinsic error for V DC	$\pm 0.5\%$ rdg. + 3 d	$\pm 0.5\%$ rdg. + 3 d	$\pm 0.5\%$ rdg. + 2 d	$\pm 0.2\%$ rdg. + 3 d
AC voltage measurement	100 mV ... 600 V	100 μ V ... 1000 V	100 μ V ... 600 V	10 μ V ... 600 V
Intrinsic error for V AC	$\pm 1\%$ rdg. + 3 d	$\pm 1\%$ rdg. + 3 d	$\pm 1\%$ rdg. + 5 d	$\pm 0.5\%$ rdg. + 30 d
TRMS V	AC	AC	—	AC
DC current measurement	10 μ A ... 10 (16) A	10 μ A ... 10 (16) A	10 μ A ... 10 A	10 nA ... 10 A
Intrinsic error, DC	$\pm 1\%$ rdg. + 5 d	$\pm 1\%$ rdg. + 5 d	$\pm 0.8\%$ rdg. + 2 d	$\pm 0.5\%$ rdg. + 5 d
AC current measurement	10 μ A ... 10 (16) A	10 μ A ... 10 (16) A	10 μ A ... 10 A	10 nA ... 10 A
Intrinsic error, AC	$\pm 1.5\%$ rdg. + 2 d	$\pm 1.5\%$ rdg. + 2 d	$\pm 1.0\%$ rdg. + 5 d	$\pm 1.0\%$ rdg. + 30 d
TRMS A	—	—	—	AC
Resistance measurement	0.1 Ω ... 40 M Ω	0.1 Ω ... 30 M Ω	0.1 Ω ... 40 M Ω	10 Ω ... 30 M Ω
Intrinsic error, resistance	$\pm 0.7\%$ rdg. + 3 d	$\pm 0.7\%$ rdg. + 3 d	$\pm 0.8\%$ rdg. + 2 d	$\pm 0.2\%$ rdg. + 5 d
4-wire milliohm measurement	—	—	—	—
Power and energy measurement	—	—	—	—
Mains quality	—	—	—	—
Capacitance measurement	—	10 pF ... 400 μ F	1.0 pF ... 40 μ F	10 pF ... 300 μ F
Intrinsic error, capacitance	—	$\pm 1\%$ rdg. + 6 d	$\pm 3\%$ rdg. + 40 d	$\pm 1\%$ rdg. + 6 d
Temperature measurement, Pt100/1000	—	—	—	-200° ... +850°
Thermocouple (type)	-50° ... +400° (K)	-200° ... +800° (K)	—	-250 ... +1372° (K)
Continuity testing	■	■	■	■
Diode test	2 V	2 V	3 V	5.1 V
Frequency measurement	0.1 ... 1 kHz	0.1 Hz ... 1 MHz	0.01 Hz ... 400 kHz	0.01 Hz ... 1 MHz
Level measurement (dB)	—	—	—	—
DATA / MIN-MAX storage	■	■	■	■
Data storage (measured values)	—	—	—	—
Analog display, 35/36 scale graduations	■	■	■	■
Digital display (places/digits)	3 ⁶ / ₇ = 6000 d	3 ⁶ / ₇ = 6000 d	3 ³ / ₄ = 4000 d	4 ³ / ₄ = 30,000 d
Display illumination	■	■	■	■
Measurements per second	20 analog / 2 digital	20 analog / 2 digital	20 analog / 2 digital	20 analog / 2 digital
Bandwidth	1 kHz	1 kHz	500 Hz	10 kHz
Interface	—	IR	—	USB
Automatic blocking sockets	■	■	—	—
Measuring category	CAT III / 600 V	CAT IV / 600 V CAT III / 1000 V	CAT III / 300 V CAT II / 600 V	CAT II / 300 V
Calibration certificate	DKD	DKD	—	DKD
Weight with batteries in g	350 g	350 g	200 g	450 g
Batteries / operating hours	2 ea. 1.5 V / to 750	2 ea. 1.5 V / to 750	2 ea. 1.5 V / 600	2 ea. 1.5 V / 200
Dimensions in mm (W X H X D)	84 x 195 x 35	84 x 195 x 35	92 x 154 x 25	146 x 118 x 44
Protection	IP 40	IP 40	IP 52	IP 42
Approvals and certificates	CE	CE	CE	CE
Accessories / included	Cable set, rubber holster	Cable set, rubber holster	Cable set	Cable set
Software option	—	METRAwin10	—	METRAwin10
Article number	M205A	M206A	M212A	M234D



T-COM		T-COM plus		ISO		ISO @Aero		27M		27I(AS)		METRAHIT	
100 µV ... 600 V		300 mV ... 600 V		100 µV ... 600 V		DC voltage measurement		± 0.5% rdg. + 1 d		± 0.5% rdg. + 1 d		Intrinsic error for V DC	
100 µV ... 600 V		300 mV ... 600 V		100 µV ... 600 V		AC voltage measurement		± 1.5% rdg. + 3 d		± 1.5% rdg. + 3 d		Intrinsic error for V AC	
AC, AC+DC		AC, AC+DC		—		TRMS V		100 µV ... 1 A		300 µA ... 1 A		With clamp	
± 0.5% rdg. + 5 d		± 0.5% rdg. + 5 d		—		DC current measurement		100 µV ... 1 A		300 µA ... 1 A		—	
± 1.5% rdg. + 5 d		± 1.5% rdg. + 5 d		—		Intrinsic error, DC		AC, AC+DC		AC, AC+DC		—	
AC, AC+DC		AC, AC+DC		—		AC current measurement		100 mΩ ... 30 MΩ		300 Ω ... 30 MΩ		—	
± 0.5% rdg. + 1 d		± 0.5% rdg. + 1 d		—		Intrinsic error, AC		10 mΩ ... 30 MΩ		10 mΩ ... 30 MΩ		Resistance measurement	
—		—		—		Intrinsic error, resistance		0.001 mΩ ... 30 Ω		0.001 mΩ ... 30 Ω		4-wire milliohm measurement	
5 kΩ ... 300 MΩ 100 V		5 kΩ ... 300 MΩ 10 V/100 V		5 kΩ ... 3 GΩ 50 V ... 1000 V		5 kΩ ... 3 GΩ 10 V ... 500 V		—		10 kΩ ... 3 GΩ 50 V ... 500 V		Insulation measurement/ measuring voltage	
30 nF ... 300 µF		30 nF ... 300 µF		—		Capacitance measurement		± 1% rdg. + 6 d		± 1% rdg. + 6 d		—	
± 1% rdg. + 6 d		± 1% rdg. + 6 d		—		Intrinsic error, capacitance		-200° ... +850°		-200° ... +850°		Temperature measurement, Pt100/1000	
-250° ... +1372° (K)		-250° ... +1372° (K)		—		Thermocouple (type)		—		—		—	
■		■		■		Continuity testing		13 V		13 V		3 V	
13 V		13 V		3 V		Diode test		300 Hz ... 300 kHz		0.1 Hz ... 300 kHz		0.01 Hz ... 3 kHz	
300 Hz ... 300 kHz		0.1 Hz ... 300 kHz		0.01 Hz ... 3 kHz		Frequency measurement		■		■		■	
■		■		■		Level measurement		540 kB (15,400)		540 kB (15,400)		32 kB (1000)	
540 kB (15,400)		540 kB (15,400)		32 kB (1000)		Data storage (measured values)		■		■		■	
■		■		■		Analog display, 35/36 scale graduations		3¼=3100d		4¼=30000d		3¼=3100d	
3¼=3100d		4¼=30000d		3¼=3100d		4¼=30000d		4¼=31000d		4¼=31000d		Digital display (places/digits)	
■		■		■		Display illumination		40 analog/10 digital		40 analog/10 digital		10 analog / 2 digital	
40 analog/10 digital		40 analog/10 digital		10 analog / 2 digital		Measurements per second		10 kHz		10 kHz		1 kHz	
10 kHz		10 kHz		1 kHz		Bandwidth		IR		IR		IR	
IR		IR		IR		Interface		■		■		■	
■		■		■		Automatic blocking sockets		CAT II/600V CAT III/300V		CAT II/600V CAT III/300V		CAT II/600V	
CAT II/600V CAT III/300V		CAT II/600V CAT III/300V		CAT II/600V		Measuring category		DKD		DKD		DKD	
DKD		DKD		DKD		Calibration certificate		420 g		420 g		350 g	
420 g		420 g		350 g		Weight with batteries		2 ea. 1.5 V / 200		2 ea. 1.5 V / 200		3 ea. 1.5 V / 20	
2 ea. 1.5 V / 200		2 ea. 1.5 V / 200		3 ea. 1.5 V / 20		Batteries / operating hours		89 x 199 x 43		89 x 199 x 43		84 x 195 x 35	
89 x 199 x 43		89 x 199 x 43		84 x 195 x 35		Dimensions in mm (W X H X D)		IP 54		IP 54		IP 54	
IP 54		IP 54		IP 54		Protection		CE		CE		CE	
CE		CE		CE		Approvals and certificates		Cable set, pouch,, rubber holster		Cable set, pouch,, rubber holster		Cable set, rubber holster Cable set, rubber holster, (case)	
Cable set, pouch,, rubber holster		Cable set, pouch,, rubber holster		Cable set, rubber holster Cable set, rubber holster, (case)		Accessories / included		METRAwin10		METRAwin10		METRAwin10 / 90	
METRAwin10		METRAwin10		METRAwin10 / 90		Software option		M246A		M246S		M246B	
M246A		M246S		M246B		Article number		M246M		M227A		M227B (M227C)	
M246M		M227A		M227B (M227C)									



Shunts Article: see description

Shunt Resistors for Multimeters Without Current Measuring Function

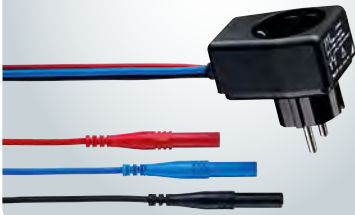
The shunt resistors serve as adapters for multimeters without their own current measuring function, or for extending the current range (NW10A).

- **NW300mA (Z205C):** 300 mA – 1 Ω – Class 0.5 – 1 mV/mA
- **NW3A (Z205B):** 3 A – 0.1 Ω – class 0.5 – 600 V – CAT IV – 100mV/A

PMA16 Article: Z228A

PMA16 Power Measuring Adapter

The power measuring adapter is an intermediate plug for the measurement of power consumption at single-phase consumers with an additional cable for connection to the multimeter's voltage path.



SM16 Article: GTM9070190E0002

SM16 Current Measuring Adapter

For safe, trouble-free measurement of current consumption via the mains plug of connected power consumers. The cable with contact-protected connectors is connected directly to the current measurement sockets at the multimeter.



USB-HIT Z216A /Pack: Z216B

IR – RS 232 Bidirectional Snap-On Interface Adapter

Data are transmitted from the multimeter to the adapter in an electrically isolated, bidirectional fashion, and to the USB interface for PCs and laptops.

- **USB-Pack:** including METRAwin10/ METRAHit software



BD232 Article: GTZ3242100R0001 / **BD Pack 1** Article: Z215A

IR – RS 232 Snap-On Interface Adapter

The infrared interface allows for electrically isolated data transmission between PC and multimeter. Data transmission is indicated visually by means of two LEDs. The BD 232 interface adapter is above all recommended for multimeters with integrated memory. It can also be used for online data transmission with multimeters which do not have integrated memory. The BD-Pack is available as a complete package for single-channel

operation. In order to expand to 2, 3 or 4-channel operation, an additional BD232 is required for each channel, as well as the additionally required multimeters.

- **BD Pack 1:** including METRAwin10/ METRAHit software, RS 232 interface cable Z3241 and installation instructions



USB | XTRA Article: Z216C

Bidirectional Infrared-USB Interface Adapter for Starline Multimeters with Serial IR Interface for Connection to a USB Port at a PC

Adapter for data transmission between the multimeter and the PC.



Z206D

Article: Z206D

Quick charger for NiMH/NiCd batteries (AA, AAA)



AC / DC Current Sensor Article: see table

AC-DC Current Sensors with Voltage Output, mV / A
Current within conductors can be conveniently and safely measured with current transformer clamps and multimeters.

Scope of delivery:

- Current sensor with connector cable
- 9V flat cell battery

Advantages:

- The electrical circuit need not be interrupted – no electrical connection to the conductor
- Measurement of current up to 2000 A – no multimeter overloading due to current surges



Type	Article	Measuring Range = DC, ~AC	Measuring Category	Wire Dia. in mm	Trans. Ratio V/A	Frequency range	Intrinsic Uncertainty ± (% rdg. + A)
Z13B	Z213B	0.5 ... 60/600 A _{DC} 0.2 ... 40/400 A _~	CAT IV/300V	50	10 / 1	DC ... 65 Hz / ... 10 kHz	1.5 % / 2 %

AC/DC Current Sensors Article: see table

The CP30, CP330 and CP1100 current clamp sensors have been developed for precise contactless measurement of alternating and direct current, as well as complex current waveforms (TRMS).

They're well suited for precision current measurement thanks to the use of the latest Hall effect technology.

- AC and DC current measurement for TRMS multimeters
- Highly accurate: 1%
- Automatic shutdown for extended battery service life
- Transformation ratios can be set directly at METRAHIT multimeters
- Easy zero balancing by simply pressing a key
- Measuring category: CAT III / 300V



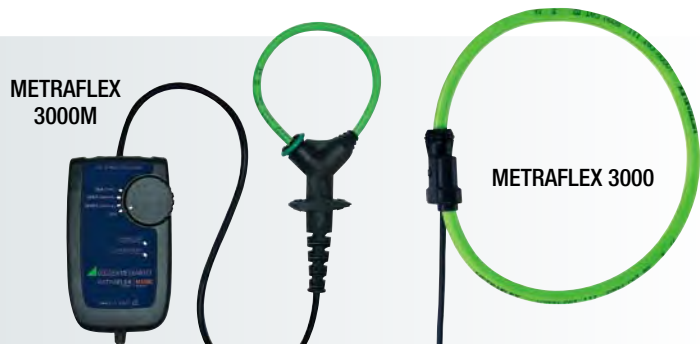
Type	Article	Measuring Range, AC, DC	Resolution	Wire Dia. in mm	Overcurrent Capacity	Frequency Range (DC)	Intrinsic Uncertainty		Gain Drift / °C	Trans. Ratio, mV/A
							± (% rdg. + A)			
CP30	Z201B	0 ... 30 A	1 mA	25	500 A (60 s)	Up to 20 kHz (-1 dB)	1% + 2 mA		0.01	100
CP330	Z202B	0 ... 450 A	50 mA / 100 mA	25	600 A (60 s)	Up to 20 kHz (-3 dB)	1% + 50 / 100 mA		0.1	10 / 1
CP1100	Z203B	0 ... 1400 A	100 mA / 500 mA	32	2000 A (60 s)	Up to 20 kHz (-1 dB)	1% + 100 / 500 mA		0.1	10 / 1

Flexible Current Sensors Article: see table

Flexible current sensors with voltage output for measuring alternating current at difficult to access places; highly insulated and with range selector switch (selectable transformation ratio). Max. phase error is 2.5° at a frequency of up to 1kHz.

Scope of delivery, METRAFLEX:

- Two 1.5V AA batteries



Type	Article	Measuring Range, DC, AC	Measuring Category	Loop Length mm	Trans. Ratio V/A	Frequency Range	Intrinsic Uncertainty ± (% rdg. + mA)
METRAFLEX 3000	Z207E	30/300/3000 A	CAT III / 1000V CAT IV / 600V	610	100 / 10 / 1	10 Hz ... 10 kHz	1% ± 100
METRAFLEX 3000M	Z207J	30/300/3000 A	CAT III / 1000V CAT IV / 600V	175	100 / 10 / 1	10 Hz ... 100 kHz	1% ± 200



AC Current Transformers Article: see table

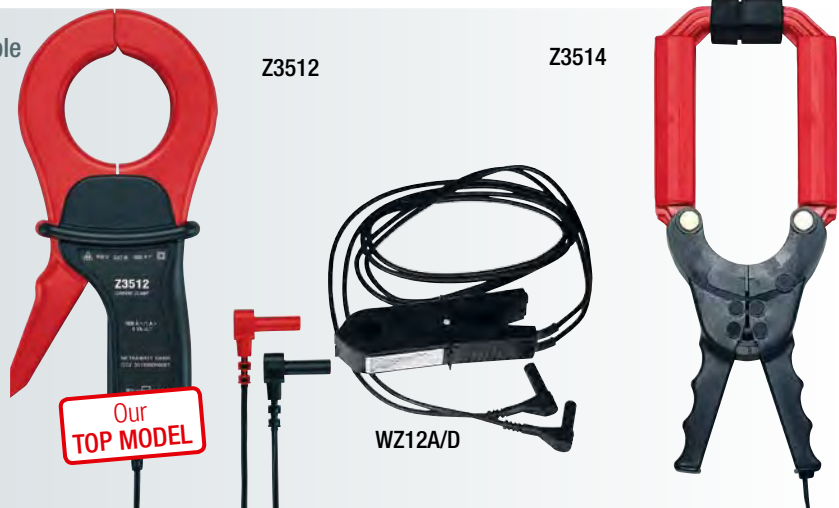
AC current transformers with wcurrent output, mA / A

Scope of delivery:

- Current sensor with connector cable

Advantages:

- The electrical circuit need not be interrupted – no electrical connection to the conductor
- Measurement of current up to 2000 A – no multimeter overloading due to current surges



Type	Article	Measuring Range, AC	Measuring Category	Wire Dia. in mm	Trans. Ratio mA / A	Frequency range	Intrinsic uncertainty
WZ12A	Z219A	15 ... 180 A	CAT III / 300V	15 mm	1	45 ... 65 ... 400 Hz	± 3% rdg.
WZ12D	Z219D	0.03 ... 150 A	CAT III / 300V	15 mm	1	45 ... 65 ... 500 Hz	± (2.5% rdg. + 0.1 mA)
WZ11A	Z208A	1 ... 200 A	CAT III / 600V	20 mm	1	48 ... 65 ... 400 Hz	± 1 ... 3% rdg.
Z3511	GTZ3511000 R0001	4 ... 500 A	CAT III / 600V	30 x 63 mm	1	45 ... 65 Hz ... 1 kHz	± (3% rdg. + 0.4 A)
Z3512	GTZ3512000 R0001	0.5 ... 1000 A	CAT III / 600V	52 mm	1	30 ... 45 ... 65 Hz ... 5 kHz	± 0.5 ... 0.7% rdg.
Z3514	GTZ3514000 R0001	1 ... 2000 A	CAT III / 600V	64 x 150 mm	1	30 ... 45 ... 65 Hz ... 5 kHz	± 0.5% rdg.

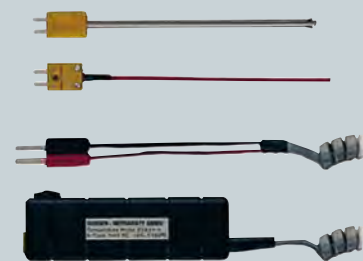
Temperature Probes Article: see table

AC Current Transformers with Current Output, mV/A

Suitable for temperature measurement from -25 to +1150° C. The measurement output is connected to the mV / V measurement input at the multimeter.

Scope of delivery:

- Z343-1: temperature probe with a permanently mounted, standard immersion sensor
- Z343-4 and Z343-9: temperature probe without plug-in sensor



Type	Article	Measuring range	Sensor Type	Intrinsic uncertainty	Output Ω Multimeter	Output V	Operating Temperature	Power supply
Z3431-3	GTZ3431003 R0001	-20° C ... +350° C	NiCr-NiAl, type K thermocouple	± (0.5% rdg. + 0.5° C)	> 10 kΩ	1 mV / °C	5° C ... 45° C	1.5 V baby cell, 250 hour service life
Z3431-4	GTZ3431004 R0001	-25° C ... +1150° C	NiCr-NiAl, type K thermocouple	± (1% rdg. + 1° C)	> 10 kΩ	1 mV / °C	5° C ... 45° C	1.5 V baby cell, 250 hour service life
Z3431-9	GTZ3431009 R0001	-20° C ... +350° C	NiCr-NiAl, type K thermocouple	± (0.5% rdg. + 0.5° C)	> 10 kΩ	1 mV / °C	5° C ... 45° C	1.5 V baby cell, 250 hour service life
Z3431-5	GTZ3431005 R0001	... + 1100° C	NiCr-NiAl, type K thermocouple	Standard immersion sensor, can be plugged into temperature probes Z343-4 and Z343-9				
Z3431-6	GTZ3431006 R0001	... + 850° C	NiCr-NiAl, type K thermocouple	Surface sensor, can be plugged into temperature probes Z343-4 and Z343-9				
Z3431-7	GTZ3431007 R0001	... + 450° C	NiCr-NiAl, type K thermocouple	High temperature sensor tape, can be plugged into temperature probes Z343-4 and Z343-9				
Z3431-8	GTZ3431008 R0001	... + 250° C	NiCr-NiAl, type K thermocouple	Flexible, insulated sensor, can be plugged into temperature probes Z343-4 and Z343-9				



Temperature Sensors Article: see table



Scope of delivery:

- Z3409: PT 100 temperature sensor for surface and immersion measurements
- TF220: PT1000 immersion sensor for measurements in gases and liquids
- TF550: PT100 immersion sensor for measurements in ovens and freezers

- TF400CAR: PT1000 temperature sensor for oil temperature measurement
- TF400SURFACE: Fast reacting surface temperature sensor, type K thermocouple
- TS-Chipset: PT100 miniature temperature sensor (10 pieces, adhesive) for spot measurements at small measuring points

Type	Article	Sensor element	Length of Element / Sensor	Temp. Range	Accuracy	Intrinsic Error K at 0° C / ... °C	Transient recovery, T90 Water/Air	Lead in mm	Outer Jacket / Insulation
Z3409	GTZ3409000 R0001	Pt100	130/1000 mm	-40 ... -600	Class A	0.15/600:1.35	5 s/30 s	Strand, 2 ea. 0.35	PVC/PVC
TF220	Z102A	Pt1000	39/1500 mm	-50 ... +220	Class B	0.3/220:1.4	8 s/33 s	Strand, 2 ea. 0.35	Teflon/Teflon
TF550	GTZ3408000 R0001	Pt100	40/1500 mm	-50 ... +550	Class B	0.3/550:3.1	8 s/33 s	Strand, 2 ea. 0.35	V4A / glass
TF400 CAR	Z102C	Pt1000	810/2310 mm	-50 ... +500	Class B	—/—	—/—	Strand, 2 ea. 0.35	PVC/PVC
TF400 SURFACE	Z102E	K (NiCr-Ni)	280/130 mm	-50 ... +400	—	—/—	2 s	Strand, 2 ea. 0.35	PVC/PVC
TS-Chipset	GTZ3406000 R0001	Pt100	2.3/10 mm	-50 ... +550	Class B	0.4/550:3.1	0.3 s/15 s	0.25 dia. / Ni-Pt	—/—

Overview, Multimeter Accessories



Type	METRAHIT																	METRAmax				METRAport												
	BASE/EBASE	TECH/E/TECH	X-TRA/EXTRA	SECULIFE HIT	PRO/ESPECIAL	OUTDOOR	T-COM/plus	ISO/ISO@Aero	ENERGY	METRACAL MC	CAL	2 plus	WORLD	ONEplus	22S/M	23/24/25S	26S/M	28S	29S	30M	16/17U	27M/I	28C	28C light	1A/2A	2	3	6	12	32S/XS	40S	3A		
Current Transformers																																		
WZ11A	—	■	■	■	■	■	■	■	■	—	—	—	—	—	—	■	■	—	■	—	—	—	—	■	—	■	■	—	—	■	■	■	■	
WZ12A	—	■	■	■	■	■	■	■	■	—	—	—	—	—	—	■	■	—	■	—	—	—	—	■	—	■	■	—	—	■	■	■	■	
WZ12D	—	■	■	■	■	■	■	■	■	—	—	—	—	—	—	■	■	—	■	—	—	—	—	■	—	■	■	—	—	■	■	■	■	
Z3511	—	■	■	■	■	■	■	■	■	—	—	—	—	—	—	■	■	—	■	—	—	—	—	■	—	■	■	—	—	■	■	■	■	
Z3512	—	■	■	■	■	■	■	■	■	—	—	—	—	—	—	■	■	—	■	—	—	—	—	■	—	■	■	—	—	■	■	■	■	
Z3514	■	■	■	■	■	■	■	■	■	—	—	—	—	—	—	■	■	—	■	—	—	—	—	■	—	■	■	—	—	■	■	■	■	
Temperature Sensors and Probes																																		
TF400CAR	—	—	■	■	—	■	—	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
TF400SURF.	■	■	■	■	■	■	■	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
TF220	—	—	■	■	—	■	—	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
TF550	—	—	■	■	—	■	—	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
TS Chipset	—	—	■	■	—	■	—	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Z3409	—	—	■	■	—	■	—	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Z3431-3	■	■	■	■	■	■	■	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Z3431-9	■	■	■	■	■	■	■	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Z3431-4	■	■	■	■	■	■	■	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Z3431-5	■	■	■	■	■	■	■	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Z3431-6	■	■	■	■	■	■	■	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Z3431-7	■	■	■	■	■	■	■	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Z3431-8	■	■	■	■	■	■	■	■	■	—	—	■	■	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	

High Frequency Probe Article: GTZ3431002R0001

Z3431-2 high Frequency Probe:
100 kHz to 750 MHz, 0.25... 50 VAC
 In combination with a multimeter, the Z3431-2 high frequency probe allows for measurement of alternating voltages with an amplitude of 0.25 V to

50 V within a frequency range of 100 kHz to 750 MHz.
 The probe rectifies alternating voltages at a ratio of 1:1. The measuring instrument must have an input impedance of 10 MΩ.



Cable Sets, Accessories Article: see table

Cable Sets with Permanently Mounted Test Probes and Contact-Protected Angle Plugs for Safe Measuring

Hook clips, alligator clips or push-on lugs can be attached to the test probes for special measuring tasks.

- **KS17-ONE cable set (Z110K):**
600 V / CAT III, max. 16 A, 130 cm long
- **KS17-2 cable set (GTY3620034P0002):**
1000 V / CAT III – 600 V / CAT IV, max. 16 A, 130 cm long
- **KS17S cable set (Z110H):**
1000 V / CAT II, 120 cm long, 2 mm diameter steel tips
- **KS-NTS cable set (Z110W):**
1000 V / CAT III – 600 V / CAT IV, max. 20 A, double insulated silicon measuring cables (1.2 m), with one pair each small test probes, alligator clips, clip hooks and North American test probes
- **KS21T cable set (Z110U):**
600 V / CAT II / 16A, 200 cm long for cable multimeter
- **KS29 cables set (Z229A):**
safety cable set for power meters
- **KY94 hook clip (GTY3610094P01)**
- **KY95-1 alligator clip (GTZ3215000R0002):**
300 V / CAT III
- **KY95-2 alligator clip (Z110J):**
1000 V / CAT III, 19A
- **KY96 push-on lug (GTY3610096P01)**

KS17-ONE
 KS17-2
 KS29



KS17-S



KS-NTS

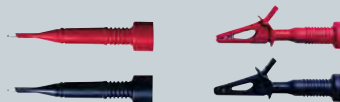


KS21-T



KY94

KY95-1



KY95-2



KY96

RS 232 Interface Cable

Article: GTZ3241000R0001

Interface Cable for Connecting PC and Measuring Instrument

2 meters long, 9-pin subminiature plug/socket connector, 1:1 uncrossed

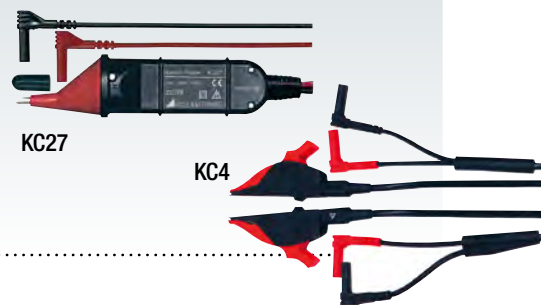
Kelvin Clips Article: Z227A

Kelvin clips/Kelvin probes are used for connecting low impedance (e.g. contact resistors, shunts, ...) to an ohmmeter with 4-wire connection. This allows for compensation of cable resistance.

- KC4: Kelvin clips (1 set = 2 pieces) for 4-pole connection of low-resistance DUTs, cable length: 120 cm, clip for connection to DUTs with diameters of up to 30 mm

Kelvin Probes Article: Z227B

- Kelvin probes (1 set of 2 ea.) with 2 stainless steel tips for 4-pole connection of low-resistance DUTs, 120 cm cable length



Overview, Multimeter Accessories

Type	METRAHIT																		METRAmax				METRAport															
	BASE/EBASE	TECH/ETECH	X-TRA/EXTRA	SECULIFE HIT	PRO/ESPECIAL	OUTDOOR	T-COM / plus	ISO/ISO@Aero	ENERGY	METRACAL MC	CAL	2 plus	WORLD	ONE Plus	22S/M	23/24/25S	26S/M	28S	29S	30M	16/7/U	27M/I	28C	28C light	1A/2A	2	3	6	12	32S/XS	40S	3A						
High-Frequency Probe																																						
Z3431-2	—	—	■	■	—	—	—	—	—	—	—	■	■	■	■	■	■	■	■	■	■	■	—	—	—	—	■	—	■	■	■	■	■	■				
Measuring Accessories																																						
KS17-ONE	—	—	—	—	—	—	—	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				
KS17-2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
KS17S	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
KS-NTS	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
KS21T	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
KS29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
KY94	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
KY95-1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
KY95-2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
KY96	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Z3241	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Kelvin Clips																																						
KC4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
KC27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Fuses for Multimeters

Type	Designation	Article	For following devices:
FF (UR) 16 A/1 kV AC/DC	Fuse link	Z109A	METRAHIT 24S ... 26S
FF (UR) 10 A/1 kV AC/DC	Fuse link	Z109L	METRAHIT PRO, TECH, X-TRA, ETECH, EXTRA, 2, WORLD, 28S, 29S
FF (UR) 1.6 A/1 kV AC/DC	Fuse link	Z109C	METRAHIT 23S ... 26S, 27M/I, 28S, 29S
FF 1.6 A/700V AC	Fuse link	Z109E	METRAHIT ONE Plus/2/WORLD/2A, METRAmax 12, METRAport 3A
FF (UR) 16 A/600V AC	Fuse link	Z109D	METRAHIT ONE Plus
FF 630 mA/700V	Fuse link	Z109J	METRAHIT 1A
FF 6.3 A/500V	Fuse link	Z109K	METRAHIT 1A
FF 1.6 A/700V AC	Fuse link	Z109E	METRAHIT ONE Plus/2A, METRAmax 12, METRAport 3A
FF 16 A/600V AC	Fuse link	Z109A	METRAmax 12, METRAport 3A, METRAHIT 2A
FF 1 A/380V (5 x 20)	Fuse link	Z109H	METRAport 32S/32XS
T 16 A/500V (6.3 x 32)	Fuse link	Z109I	METRAport 32S/32XS
F 500 mA/250V	Fuse, F1/F2 multimeter section	Z109F	METRAHIT 28C
M 125 mA/250V	Fuse, F3 calibrator section	Z109G	METRAHIT 28C and 28c light
FF 6.3 A/400V	Fuse link	Z109M	METRACAL MC

METRAwin 10/METRAHit Article: GTZ3240000R0001

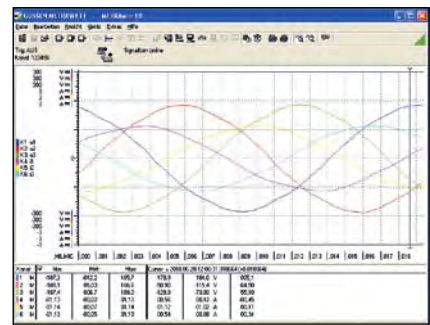
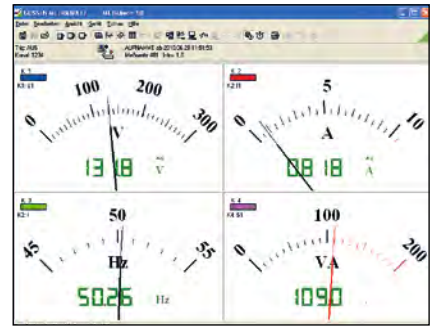
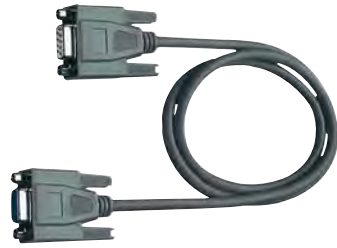
Our
TOP MODEL

System Software for METRAHit Multimeters

Any METRAHit multimeter can be transformed into a professional, PC-based universal recording system with METRAwin 10 and an interface adapter or a memory adapter. Measured values are queried from the multimeters, managed at the PC and displayed as Yt or XY diagrams (up to 6 channels), or in tabular format (up to 10 channels) with METRAwin 10. In the online mode, measurement data are displayed at up to 4 virtual indicator instruments or digital displays with adjustable limit values. High performance, online arithmetic functions allow for data analysis and evaluation. The sampling interval can be set within a broad range depending upon the type of utilized multimeter and the selected measuring function: online: 50 ... 100 ... 200 ... 500 ms – 1 s ... –60 min., or offline to the clipboard at max. 0.5 ms (METRAHit 29S). Measurement data can be imported to other Windows PC applications such as WORD and EXCEL via the clipboard. METRAwin 10 runs under Windows 95, 98, ME, NT, 2000, XP, Vista and 7 (32 bit)

- **Multimeter and indicator instrument:** Uploaded measured values are displayed at the screen both digitally and at an analog scale.
- **Data logger:** Acquired measurement data are displayed chronologically at the screen in easy to read tabular format.

- **Arithmetic functions:** Measurement data from different channels can be linked and processed with high performance arithmetic functions.
- **Yt diagram:** Acquired measurement data are displayed at the screen as a time graph with a horizontal time axis, and are measured off with two cursors. Stored signals can be expanded or compressed in amplitude or along the time axis (zoom function). The time axis can be scaled in absolute time, or in relative measuring time.
- **Line recorder:** Up to 10 channels can be printed out continuously as a Yt line graph at a color printer.
- **XY diagram:** Acquired data are displayed as an XY graph and are measured off with the cursors. As is the case with all display formats, all scales can be freely adjusted.
- **Sampling:** Can be triggered either manually or automatically with an adjustable interval (50 ms ... 1 hr.), or in a signal dependent fashion with adjustable signal hysteresis (0 to 500 digits). The minimum sampling interval for devices with integrated memory is 0.5 ms. Data can be controlled with time and window triggers, and can be saved automatically as multiple data files.



Overview: Software



Type	METRAHit															METRAmax			METRAport															
	BASE/EBASE	TECH /ETECH	X-TRA /EXTRA	SECULIFE HIT	PRO /ESPECIAL	OUTDOOR	T-COM /plus	ISO /ISO@Aero	ENERGY	METRACAL MC	CAL	2 plus	WORLD	ONEPlus	22S/M	23/24/25S	26S/M	28S	29S	30M	16I/T/U	27M/I	28C	28C light	1A/2A	2	3	6	12<aaaa	32S/XS	40S	3A		
METRAwin10/Hit	■	■	■	■	■	■	■	■	■	—	—	■	■	■	■	■	■	■	■	■	■	■	■	—	—	—	—	—	—	—	—	—	—	—
METRAwin 90-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	■	■	■	■	■	■	■	■	■	■	■	—	—	—	—	—	—	—	—	—
METRAwin 90 F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	■	■	■	■	■	■	■	■	■	■	■	—	—	—	—	—	—	—	—	—
METRAwin 90 FJ	—	—	—	—	—	—	—	—	—	—	—	—	—	—	■	■	■	■	■	■	■	■	■	■	■	—	—	—	—	—	—	—	—	—

Software																																							
METRAwin10/Hit	■	■	■	■	■	■	■	■	■	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
METRAwin 90-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
METRAwin 90 F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
METRAwin 90 FJ	—	—	—	—	—	—	—	—	—	—	—	—	—	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Pouches / Hard Cases / Covers for Multimeters

i More information at:
www.gossenmetrawatt.com

Type	Designation	Article	METRAHIT			METRAmax		METRAport
			STARLINE	ONE...30M	1A / 2A	2 / 3 / 6	12	40S / 3A
HitBag	Cordura belt pouch	Z115A	■	■	—	—	—	■
F809	Ever-ready case with cable compartment	GTY3172083P01	—	—	■	—	—	—
F822	Ever-ready case with cable compartment	GTY3172095P01	—	—	—	—	—	■
F823	Ever-ready case with cable compartment	GTY3172097P01	—	—	—	—	■	—
F825	Ever-Ready Case	GTY3172100P01	—	—	—	■	—	—
F829	Carrying pouch	GTZ3301000R0003	■	■	—	—	■	—
F836	Ever-ready case with cable compartment	GTZ3302000R0001	■	■	—	—	—	—
F840	Ever-ready case for 2 devices, 2 adapters, accessories	GTZ3302001R0001	■	■	—	—	—	—
F841	Carrying pouch	Z104A	—	—	—	■	—	—
GH X-TRA	Rubber holster	Z104C	■	—	—	—	—	—
GH18	Rubber holster with carrying strap	GTZ3212000R0001	—	■	—	—	—	—
GH185	Rubber holster	GTY3171185P01	—	—	■	—	—	—
GH19	Rubber holster	Z104A	—	■	—	■	—	—
HC20	Hard case for 1 device, accessories	Z113A	■	■	—	—	—	—
HC30	Hard case for 2 devices, accessories	Z113A	■	■	—	—	—	—



HitBag



F809



F822



F823



F840



F825



F829



F836



F841

Our TOP MODEL



GH X-TRA



GH18



GH185



GH19



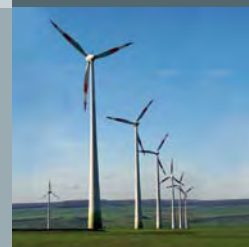
HC20 / HC30



MAINS QUALITY

Mains Quality – Always on the Safe Side with Clean Electrical Networks. Industry, commerce, health care services, banks and other service providers are extremely dependent upon electrical and electronic systems. These systems influence mains quality themselves in many ways, but they react extremely sensitively to disturbances as well. There's only one convincing response to the

challenges faced by users in the area of electrical power supply: highly versatile MAVO-WATT and MAVOLOG mains quality analyzers – power tools for mains quality assurance. With the help of these innovative products, all relevant measured quantities can be acquired which are decisive for the quality of electrical supply power – the perfect foundation for sustainable optimization.



MAVOWATT | 4



Article: GTM3033000R001

The multiple power meter for direct measurement of DC power, as well as RMS power measurement for single-phase alternating current and balanced load three-wire, three-phase current.

- Determination of reactive power
- Measurement of phase-to-phase voltage(s)
- Ideal instrument for training facilities
- Phase sequence indicator
- $\cos \varphi$ measurement

Scope of delivery:

- Batteries

Optional accessories

- Factory calibration certificate



METRAHIT | ENERGY

Single Phase Power & Energy Analyzer

Article: M249A

Applications:

- 3 functionalities for one phase in hand-held multimeter size:
 - ◆ power & energy analyzer, power & energy meter, TRMS multimeter
- very precise measurement
- power & energy measurement of low power values
(EU guideline 2005/32/EG & EU Directive 1275/2008) standby mode of household appliances and office machines: 2010: max. 1W
- mains quality analysis
- mains disturbance recording
- harmonic analysis, 15th
- TRMS multimeter
- multi-channel data logger



An overview of the software's performance features is available on the Internet (see order information for web address).

Please refer the data sheets for further technical specifications.



MAVOWATT | 20 Article: see description

3-Phase Energy and Power Analyzer



Advantages:

- Acquisition of energy consumption and costs
- Determination of CO₂ footprint
- Determination of inverter efficiency
- Recording of all mains-relevant parameters
- Measurement possible at 2 systems: AC/DC
- Monitoring of energy flow direction
- License-free EPRW software
- Print-out of comprehensive, customer-specific reports
- Compatible with DranView6

Applications:

The MAVOWATT 20 mains and power analyzer acquires power, demand and energy, and it calculates consumption costs as well as CO₂ footprint. Harmonics and RMS voltage dips can also be recorded for the purpose of mains evaluation. DC coupled measurement inputs make it possible to determine the efficiency of photovoltaic inverters. Channel D is laid out as a differential input for measuring voltage between the neutral conductor and protective earth. Recording of energy exported to and imported from the grid has proven

especially advantageous within a setting of alternative energy concepts.

Energy Platform Report Writer Software (EPRW)

License-free EPRW software records parameters including curves for voltage, current, active, reactive, and apparent power, power factor, harmonics, import, energy and much more in a user configured report. An energy audit report summarizes the energy measurement which consists of basic billing parameters such as tariff periods (peak, standard and off-peak), peak loads, energy costs and CO₂ balance.

Scope of delivery:

Energy and power analyzer including a complete set of measurement cables, rechargeable battery, charger, CF memory card \geq 4 GB, factory calibration certificate, operating instructions, EPRW software and carrying pouch

MAVOWATT 20 Set 1 (M817Q)

- MW 20 and accessories (see above)
- Four TR-2500A AC current clamps (10 to 500 A)





NEW
in our
product range

MAVOWATT 20 Set 2 (M817R)

- MW 20 and accessories (see above)
- Four TR-2510A AC current clamps (1 to 10A)

MAVOWATT 20 Set 3 (M817S)

- MW 20 and accessories (see above)
- DRANFLEX 3003XL/24 three-phase AC current sensor (30/300/3000 A)
- DRANFLEX 3000XL/24 AC current sensor (30/300/3000 A)
- RR/PSEURO mains power pack
- RR/PS/4A adapter cable for 4 DRANFLEX

MAVOWATT 20 Set 4 (M817T)

- MW 20 and accessories (see above)
- Four TR-2550A AC current clamps (1 to 100 A)

MAVOWATT 20 Set 5 (M817V)

same as Set 3,
plus 1 AC/DC current sensor clamp,
PR150/SP2, 150 A, 9 V battery operated

MAVOWATT 20 Set 6 (M817U)

same as Set 3,
plus 1 AC/DC current sensor clamp,
PR150/SP8, 1500 A, 9 V battery operated



MAVOLOG | 20P Article: M831A



Test Instrument for Monitoring Voltage Quality per EN50160

Advantages:

- Simple testing of voltage quality
- Predefined measuring parameters per EN50160
- Clear-cut traffic light display for mains quality
- Print-out of comprehensive test report
- Compact design – fits into building terminal boxes



Applications:

The MAVOLOG 20 P acquires and evaluates low voltage quality characteristics with nearly unlimited measuring and recording time. Monitored quantities include line frequency, line voltage, asymmetry, flicker, THD, voltage dips, short and long voltage interruptions, as well as transient and power-frequency overvoltages. A traffic light display indicates whether or not voltage quality is OK or events have occurred, and if the permissible number of events has been exceeded.

Limit values, measuring intervals and observation time periods can be freely configured with PQAmontor software, making measurement with preset parameters in accordance with EN 50160 possible, as well as adaptation to any desired customer-specific measuring tasks. After measurement has been completed, evaluation can be executed with the software at a PC and an official test report can be printed.

Technical Data:

- Measurement in single and 3-phase systems, $U_N = 100$ to $250 V_{RMS}$
- Power supply via measurement inputs in the measuring mode
- Compact design: 157 x 72 x 55 mm, minimal weight: 210 g
- Data analysis and archiving via PQAmontor software
- Functional compliance with standards: EN 50160, EN 61000-4-15

Accessories:

Accessory set: (Z864D) Carrying case, back-up fuses, safety measurement cables, pick-up clips, replacement fuses, start-stop encoder

NH adapter set: (Z864E) 3 x NH measuring pick-offs, can be plugged onto NH fuses (sizes 00 to 03), integrated high-power fuse

Programming set: (Z864F) PQAmontor software, RS 232, adapter cable, mains power pack: 90 to 264 V AC



i More information at:
www.gossenmetrawatt.com





MAVOWATT | 30 | 40 | 70

Advantages:

- Simple control per EN50160, EN 61000-4-7 and EN61000-4-15.
- Simple handling, automatic detection of electrical system types
- Automatic analysis/evaluation of measurement results in a matter of just seconds
- Automatic report generation with ultramodern PC software
- Automatic setup assistant

Applications:

The device simultaneously monitors TRMS values, harmonics, flicker and transients down to a time range of approximately 80 µs. The measuring configuration and the type of electrical circuit is selected automatically based upon detected measured quantities. Acquired data are stored to a CF memory card and can be transferred to DranView for further processing.

Technical Data:

- 8 measurement outputs, 4 voltage (differential),
- 4 current (current transformer), for measurement with line frequencies of 50, 60 and 16 2/3 Hz
- Storage of data to compact flash card
- Memory card with up to 32 GB
- Power supply:
 - ◆ Via charger: 90 to 264 V / 47 to 63 Hz
 - ◆ Rechargeable battery for up to 3 hours

MAVOWATT 40 – same as MW 30, plus:

- Acquisition of making-operations and error recording
- Analysis module for voltage dip direction, switching peaks for power factor correction and motor quality

MAVOWATT 70 – same as MW 40, plus:

- Expanded mains analysis functions
- Characterization of transients

- Rapid transient measurement as of 1 µs sampling rate with storage of waveshape parameters for distorted and asymmetrical systems per IEE1459
- Vector / arithmetic parameters

MAVOWATT 70-400

- Frequency range: 50/60 Hz and 400 Hz
- Testing per military standard 1399

Scope of delivery:

Each set includes the mains analyzer of your choice plus a complete set of measurement cables, rechargeable battery and charger, compact flash memory card ≥ 4 GB, factory calibration certificate, condensed operating instructions, DranView 6 Pro software and carrying pouch.

Set 1

Energy and mains analyzer with accessories (see above) + three TR-2500A AC current clamps (10 to 500 A)

Set 2

Energy and mains analyzer with accessories (see above) + three TR-2510A AC current clamps (1 to 10 A)

Set 3

Energy and mains analyzer with accessories (see above) + DRANFLEX 3003XL/24 three-phase AC current sensor (30/300/3000 A) + DRANFLEX 3000XL/24 AC current sensor (30 / 300 / 3000 A) + RR/PSEURO mains power pack

Type	Article	Type	Article
MAVOWATT 30 Set 1	M817E	MAVOWATT 70	M817C
MAVOWATT 30 Set 2	M817I	MAVOWATT 70 Set 1	M817G
MAVOWATT 30 Set 3	M817M	MAVOWATT 70 Set 2	M817K
MAVOWATT 40	M817B	MAVOWATT 70 Set 3	M817O
MAVOWATT 40 Set 1	M817F	MAVOWATT 70-400	M817D
MAVOWATT 40 Set 2	M817J	MAVOWATT 70-400 Set 1	M817H
MAVOWATT 40 Set 3	M817N	MAVOWATT 70-400 Set 2	M817L
		MAVOWATT 70-400 Set 3	M817P



MAVOWATT | 50 Article: M816A



3-Phase Energy and Power Disturbance Analyzer



Advantages:

- Measurement is possible in DC systems, as well as in single and 3-phase AC systems
- Complete power disturbance analysis with simultaneous measurement of all relevant mains quantities
- Power and energy analysis in power supply systems, as well as at the outputs of frequency converters
- Mains monitoring per EN 50160, EN 61000-4-7,-4-15,-4-30
- Large frequency measuring range of up to 1 kHz
- Worldwide use thanks to broad range variable power pack: 85 to 250V AC/DC
- Measurement and analysis of voltage transients of up to 1.3kV is possible as of a duration of 10 µs.

logging and analysis of energy consumption, right on up to calculation and static analysis of characteristic electrical energy supply quality in accordance with EN50160. As a test instrument it compares harmonic current generated by electrical equipment, as well as voltage fluctuation, with specified limit values. Broadband measurement is laid out for line frequencies of up to 1 kHz, and covers everything from railway power at 16²/₃ Hz through mains power with 50/60Hz, right on up to onboard electrical systems with 400 Hz.

server for remote control and read-out

- Storage of bulk data to plug-in CF memory card or USB stick
- Integrated rechargeable battery for power failures
- Relay output for generating alarms in the event that selected limit values are violated

Technical Data:

- 8 isolated measuring circuits (4 voltage and 4 current, 100 kHz sampling rate)
- 4 digital status inputs indicate consumer operating states
- 4 digital control inputs for synchronizing the measuring interval and the meter input
- Color touch-screen, 1/4 VGA
- USB ports (PC), external memory
- Ethernet TCP/IP with web

Applications:

The range of possible applications extends from acquisition, display and recording of mains quantities to




Applications / Functions	MAVOWATT 20	MAVOWATT 30	MAVOWATT 40	MAVOWATT 70	MAVOWATT 50
Mains analysis per EN 50160	—	■	■	■	■
Voltage quality measuring method	—	IEC 61000-4-30, IEEE 1159			IEC 61000-4-30
Energy/load tests/examinations	■	■	■	■	■
Extended load disturbance and asymmetry	—	—	—	■	—
Frequency measuring range	16 ² / ₃ , 50 to 60 Hz	16 ² / ₃ , 50 to 60 Hz	16 ² / ₃ , 50 to 60 Hz	16 ² / ₃ , 50 to 60 Hz MW 70-400 to 400 Hz	1000 Hz
Errors recording / in-rush	—	—	■	■	—
Motor testing	—	—	■	■	—
Data logging	■	■	■	■	■
Harmonic analysis up to the 63 rd harmonic (IEC61000-4-7, IEEE519)	■	■	■	■	Up to the 50 th harmonic
Flicker per IEC 61000-4-15, IEEE1453	—	■	■	■	■
Acquisition of fast transients	—	≥ 80 µs	≥ 80 µs	≥ 1 µs	≥ 10 µs
AnswerModule (motor state, capacitance switching, voltage dip)	—	—	■	■	—
Measurement inputs	“Common import”	Differential	Differential	Differential	Differential
Demand and energy reports	■	—	—	—	—
Monitoring modes	2	4	7	7	8
Pre, error and post cycles	0	100	10,000	10,000	300-3500
Languages	11	11	11	11	3
Interfaces (USB port, Ethernet)	Optional	Optional	Optional	Optional	■
Frequency converter measurement	—	—	—	—	■
Remote control of the Instrument	—	—	—	—	■

Accessories: MAVOWATT | 20 | 30 | 40 | 70

Type	Description	Article
TR-2510A	Current clamp sensor: 1 ... 10 A AC RMS, 40 Hz... 5kHz, 15 mm dia.	Z817A
TR-2500A	Current clamp sensor: 10 ... 500 A AC RMS, 40Hz... 5kHz, 50 mm dia.	Z817B
TR-2520A	Current clamp sensor: 100 ... 3000A AC RMS, 40Hz... 5 kHz, 72 mm dia.	Z817C
TR-2021	Current clamp sensor: 1 ... 30 A AC RMS, 40Hz... 10 kHz, 20 mm dia.	Z817D
TR-2019B	Current clamp sensor: 50 ... 300 A AC RMS, 30Hz... 5 kHz, 52 mm dia.	Z817E
TR-2022	Current clamp sensor: 10 ... 1000A AC RMS, 30Hz... 5kHz, 54 mm dia.	Z817F
TR-2023	Current clamp sensor: 200 ... 3000A AC RMS, 30Hz... 5 kHz, 65 mm dia.	Z817G
PR150/SP2	Current clamp sensor: 150 AAC/DC, 9 V battery operation	Z817N
PR1500/SP8	Current clamp sensor: 1500AAC/DC, 9 V battery operation	Z817O
PR150/SP1	Current clamp sensor: 150 A AC / DC, operation with power pack (included)	Z817P
PR1500/SP7	Current clamp sensor: 1500A AC / DC, operation with power pack (included)	Z817Q
COMM-RS232	RS 232 adapter including NodeLink	Z818A
COMM-OEA	Ethernet adapter including NodeLink	Z818B
COMM-OUA	USB adapter including NodeLink	Z818C
CFDATA-DB	Selected compact flash memory card, 256 MB	Z818F
BP-PX5	Rechargeable battery pack	Z818G
SCC-4300	Carrying pouch for measuring instrument, current clamps and manuals	Z818H
4 mm adapter	Adapter for current clamps with 4 mm safety plugs	Z817T
CA4300	TR-20xx adapter cable for current clamp sensors	Z817H
DRANFLEX 3000XL	30/300/3000A, various sensor lengths (e.g. 60 cm)	Z817V
DRANFLEX 6000XL	60/600/6000 A, various sensor lengths (e.g. 90 cm)	Z816B
METRAFLEX 3001XL	30/300/3000A, 60 cm sensor length, without power pack	Z207H
METRAFLEX 3003XL	3-phase, 30/300/3000 A, 60 cm sensor length, without power pack	Z207I

Accessories: MAVOWATT | 50

More information at:
 www.gossenmetrawatt.com



Type	Description	Max. Cable Diameter	Application	Measuring Category	Usable Range	Output Signal	Article
Plug-in shunt resistors							
Z860A	50 Ω, 0.2%, 1.5 W	—	a, b	600V CAT III	50 μA ... 20 mA	50 mV/mA	Z860A
Z861A	1 Ω, 0.2%, 1.5 W	—	a, b	600V CAT III	1 mA ... 1.2 A	1000 mV/A	Z861A
Z862A	0.05 Ω, 0.2%, 1.5 W	—	a, b	600V CAT III	0.02 ... 6 A	50 mV/A	Z862A
Z863A	0.01 Ω, 0.2%, 1.5 W	—	a, b	600V CAT III	0.1 ... 16 A	10 mV/A	Z863A
STP 100K	Set (3 pieces) 100 kΩ, 0.2%	—	a, b	600V CAT III	Low-pass filter f3dB	~ 900 kHz	Z865B
Current Clamp Sensors							
Z821B	AC, 30 Hz ... 5 kHz	64 mm	a, b, (c)	600 V / CAT II	3 ... 3000 A~	0.33 mV/A	Z821B
Z3512A	AC, switchable: 10 Hz ... 3 kHz	52 mm	a, b, c	600 V / CAT III	0.001 ... 1.2 A~ 0.01 ... 120 A~ 0.1 ... 120 A~ 1 ... 1200 A~	1000 mV/A 100 mV/A 10 mV/A 1 mV/A	Z225A



Type	Description	Max. Cable Diameter	Application	Measuring Category	Usable Range	Output Signal	Article
WZ11B	AC, switchable: 30 ... 500Hz	20 mm	a, (c)	600 V/ CAT III	0.5 ... 20 A~ 5 ... 200 A~	100 mV/A 10 mV/A	Z208B
Z13B	AC/DC, switchable: DC ... 10kHz, with 9 V battery (operating hours: approx. 50)	50 mm	b, c	300V/ CAT IV	0.2 ... 40 A~/60 A~ 0.5 ... 400 A~/600 A~	10 mV/A 1 mV/A	Z213B
CP30	AC/DC current clamp sensor	25 mm	b, c	300V/ CAT III	0 ... 30 A	100 mV/A	Z201B
CP330	AC/DC current clamp sensor	25 mm	b, c	300V/ CAT III	0 ... 450 A	10 mV/A 1 mV/A	Z202B
CP1100	AC/DC current clamp sensor	32 mm	b, c	300V/ CAT III	0 ... 1400 A	10 mV/A 1 mV/A	Z203B

Flexible AC current sensors							
METRAFLEX 3001	Switchable: 10 Hz ... 20 kHz, with batteries or external power supply	61 cm	a, b, c	1000V/CAT III 600 V/CAT IV	30 A AC, 300 A AC, 3000 A AC	100 mV/10 mV/1 mV per A (AC coupled)	Z207F
METRAFLEX 3003	3-phase set, switchable: 10 Hz ... 20 kHz, with batteries or external power supply	3x61 cm	a, b, c	1000 V/CAT III 600 V/CAT IV	30 A AC, 300 A AC, 3000 A AC	100 mV/ 10 mV/1 mV pro A (AC coupled)	Z207G

a = long-term measurement, b = harmonic measurement, c = frequency converter measurement



Accessories: MAVOWATT | 20 | 30 | 40 | 70 and 50

ABSOLUTELY NEW

Flexible Current Measuring Sensors with Voltage Output, mV / A

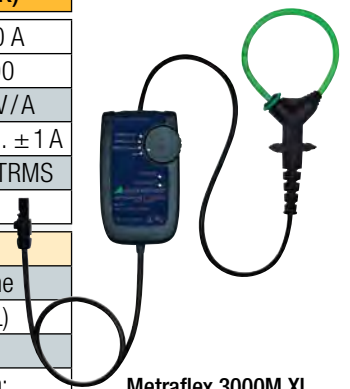
- Compact
- Small
- Rugged

The current sensor is suitable for measuring minimal alternating current values. It's highly insulated and can be equipped with a range selector having a ratio of 1:10. It simplifies the performance of measurements at difficult to access locations. The current sensor fulfills CAT III 1000 V and CAT IV 600 V.



Metraflex 3000M for MW 50

Feature	Metraflex 3000M (Z207J)			Metraflex 3000M XL (Z207K)		
	30 A	300 A	3000 A	30 A	300 A	3000 A
Measuring ranges	30 A	300 A	3000 A	30 A	300 A	3000 A
Scaling factor	10	100	1000	20	200	2000
Output sensitivity	100 mV/A	10 mV/A	1 mV/A	50 mV/A	5 mV/A	0.5 mV/A
Accuracy (45 to 65 Hz)	± 1% rdg. ± 0.2 A		± 1% rdg. ± 1 A	± 1% rdg. ± 0.2 A		± 1% rdg. ± 1 A
Noise	10 mV TRMS	2.5 mV TRMS	1 mV TRMS	5 mV TRMS	1.3 mV TRMS	0.5 mV TRMS
Output connection	1 pair 4 mm safety plugs			4-pin Hypertronics plug		
Power Supply						
Battery	2 ea. AA, MN1500 LR6 alkaline			2 ea. AA, MN1500 LR6 alkaline		
Battery service life	150 hours (M'FLEX 3000 M)			150 hours (M'FLEX 3000MXL)		
External	3.5 ... 12V DC / max. 100 mA			2 ... 3V DC / max. 100 mA		
Connection	Barrel connector, 5.5/2.1 mm; minus pole inside			Barrel connector, 5.5/2.1 mm; minus pole inside		



Metraflex 3000M XL for MW 20/30/40/70

DranView 6 Software Article: see table

Evaluation and analysis software for MAVOWATT 20/30/40/50/70

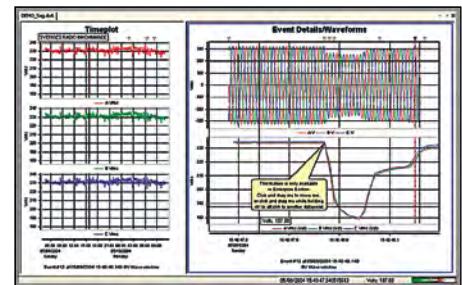
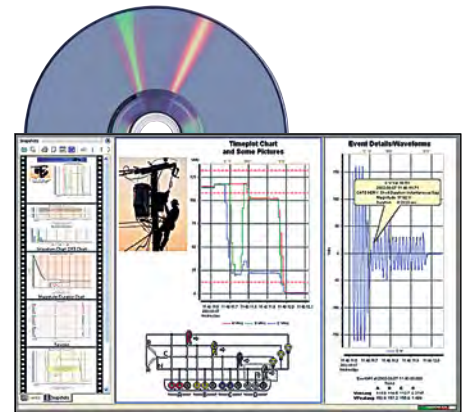
Data from power disturbance and power analyzers are evaluated and documented with versatile and convenient PC software.

- Intuitive, easy to handle user interface
- Rotatable axes in graphics, simple dragging and zooming of diagrams
- Time, waveform, amplitude duration and DFT diagrams
- Rescue kit (data repair)
- Automatic or user-specific report generator dependent upon measurement type
- Separate scaling of harmonics for voltage, current and power
- Export from any data source to PQDIF format

AmpFLEX scope of delivery:

- DranView Pro
incl. USB hardware dongle
- DranView Enterprise
incl. USB hardware dongle

Type	Article
DVP-PX	Z818D
DVE-PX	Z818E
DVP-TO-DVE	Z818J



METRAWin / MAVOWATT I 50 Article: Z852C

Data Transmission and Analysis Software for MAVOWATT 50

Saved measurement data from the MAVOWATT 50 energy and power disturbance analyzer can be visualized in various views, analyzed and documented with METRAwin10 / MAVOWATT50 software.

Recorded measurement data are transferred from the instrument to a PC with the help of a CF card or a memory stick, and are displayed at a browser.

MAVOWATT 50 permits execution of the following functions via the browser:

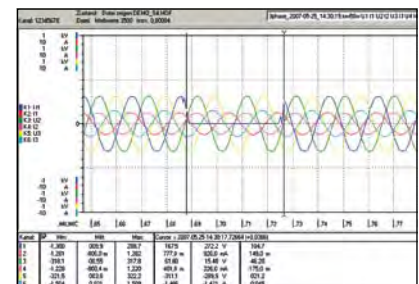
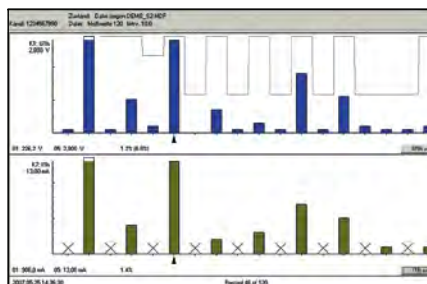
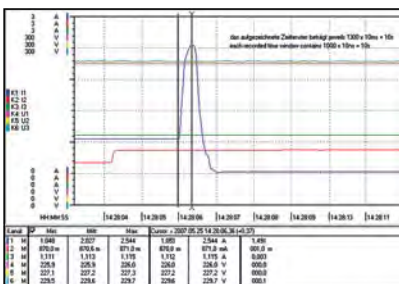
- Retrieve and display current LCD content (e.g. live measured values) per mouse click or cyclically

- Remote control of all functions which can be executed via the instrument's touch-screen per mouse click in the LCD panel shown in the browser (exceptions: touch-screen settings, network parameters and administrator functions)
- Downloading of measurement and memory profiles stored at the instrument for subsequent reuse or transfer to another instrument
- Downloading of recorded measurement data stored at the instrument for subsequent analysis with METRAwin 10

The browser can be started from METRAwin10 with the instrument's URL address. However, direct communication between the

software and the MAVOWATT 50 only takes place via the instrument's integrated web server. Recording of live measurement data at the PC is thus not possible.

- METRAwin10/MAVOWATT50 can be used with: Windows 7, Vista, ME, NT 4.0, 2000 and XP.
- German, English or French can be selected as the user interface language.



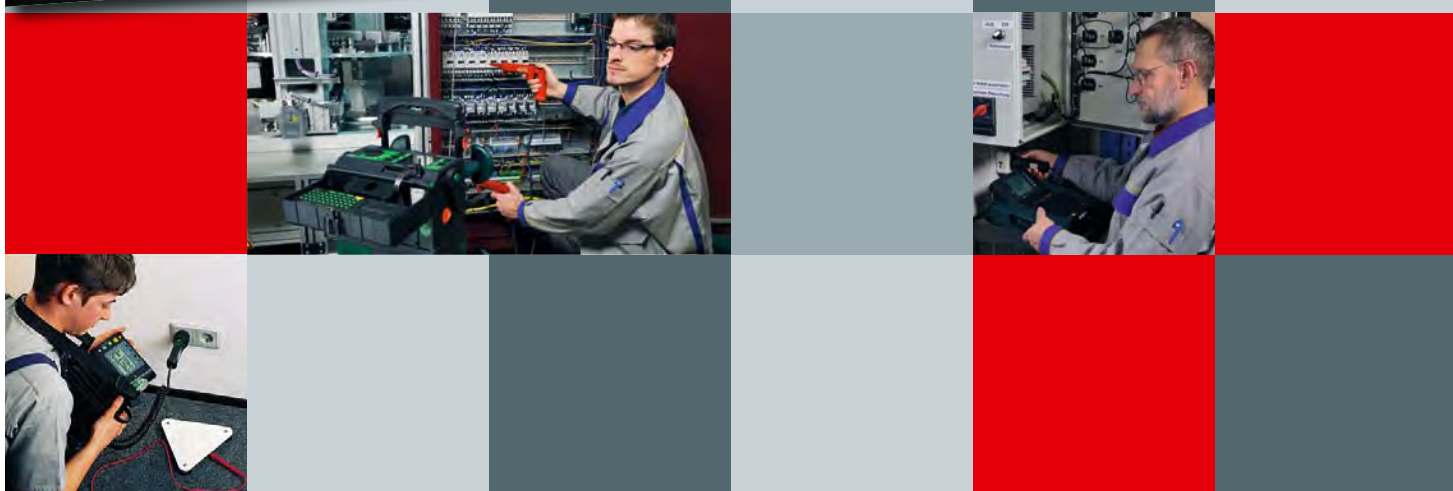
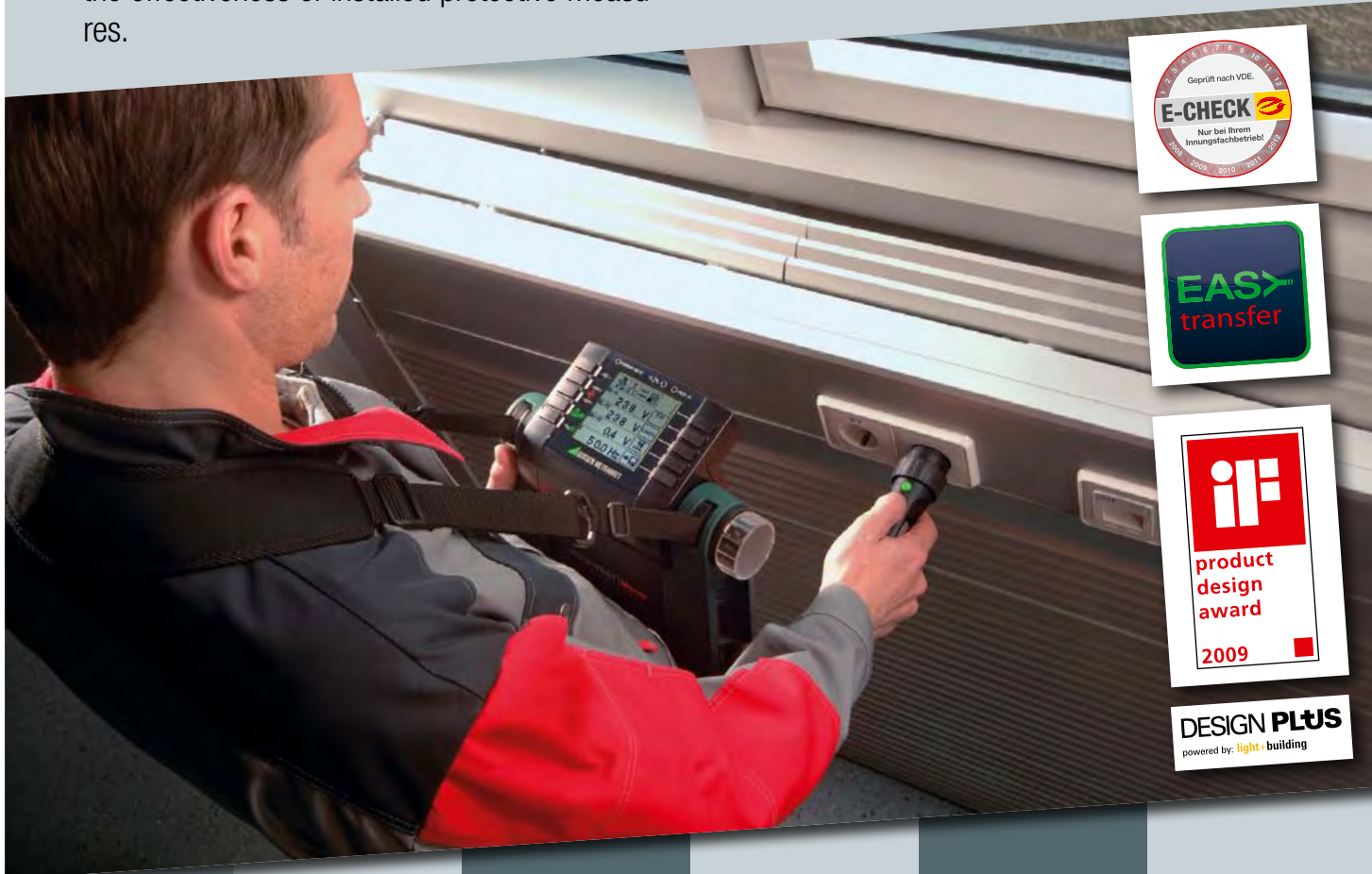
TESTERS

Protective measures in electrical systems are intended to prevent bodily injury due to accidents involving electrical current.

Of course they also prevent property damage caused by electrical power as well. And thus every electrical system should be checked with our test instruments before initial start-up, and at regular intervals thereafter, in order to assure the effectiveness of installed protective measures.

For the most part, this involves testing in accordance with VDE 0100 (IEC 60364), VDE 0105 (EN 50110) and VDE 0113 (EN 60204) regulations.

The tests themselves are executed by the instruments strictly in accordance with stipulations set forth in particular by VDE 0413 (EN 61557).



PROFITEST I Master



For testing the effectiveness of safety measures in electrical systems in accordance with **DIN VDE 0100 – 600 / DIN VDE 0105 – 100.**

For use in all alternating and 3-phase electrical systems with voltages from 65 to 500 V and frequencies of 15.4 to 420 Hz.

Advantages:

Low-resistance, insulation, earth resistance, standing-surface insulation, loop and line impedance measurements

- CAT IV
- DKD calibration certificate
- Bidirectional data exchange via USB
- AMC – automatic measurement cable compensation using 4-wire method
- Voltage drop measurement
- Insulation measurement with rising voltage
- Current measurement with Metraflex (option)
- Loop measurement without tripping the RCD
- RCCB test with continuously rising ramp
- 1 mA varistor response test with insulation measuring voltage up to 1000 V
- 2-pole measurements with plug insert or interchangeable 2/3-pole adapter
- Help menu with wiring diagrams
- Connection of RFID or barcode scanner
- Including ETC software (Electrical Testing Center)
- Bidirectional data exchange with DDS-CAD planning software
- Free firmware updates with the master updater

Advantage: adaptation to changing standards and expanded functions

- Registration at myGMC (www.gossenmetrawatt.com)

Advantages (amongst others):

- ◆ Protection against theft after

- ◆ registering your serial number
- ◆ Free download of current firmware
- ◆ Information regarding amendments to standards

Applications:

- Display of approved fuse types for electrical systems
- Energy meter start-up testing
- Calculation of cable lengths for common copper wire cross-sections
- Biasing, leakage and circulating current of up to 1 A, as well as working current of up to 150 A can be measured with the W Z12C current clamp sensor
- Phase sequence measurement (including highest line-to-line voltage)
- Testing of special RCCBs with PROFITEST MTECH: selective S, SRCDs, PRCDs (Schukomat, Sidos and others), type G/R, type AC, type A; type B, type B+
- Testing of RCD protection in IT systems

An overview of the software's performance features is available on page 78 of the catalog and on the Internet (see order information for web address). Please refer the data sheet for further technical specifications.

With DKD Calibration Certificate



Overview – Characteristics / Features	PROFITEST	
	MBASE	MTECH
RCD measurements		
UB measurement without tripping the RCCB	■	■
Tripping time measurement	■	■
Tripping current measurement	■	■
Selective, SRCDs, PRCDs, type G/R	■	■
AC/DC sensitive RCDs, type B, type B+	—	■
Loop impedance Z_{L-PE}/Z_{L-N}		
Fuse table for systems without RCDs	■	■
Without tripping the RCD	—	■
With 15mA test current without tripping the RCD	■	■
Earth resistance R_E		
I / U measuring method, mains powered	■	■
Equipotential bonding measurement R_{L0}		
Automatic polarity reversal	■	■
Insulation resistance R_{ISO}		
Variable or rising test voltage	■	■
Voltage measurement		
UL-N/UL-PE / UN-PE / f	■	■
Special measurements		
Leakage current (clamp meter measurement)	■	■
Meter start-up	■	■
Phase sequence	■	■
Standing-surface insulation Z_{ST}	■	■
Earth leakage resistance R_E (ISO)	■	■
Features		
Selectable user interface language	■	■
Memory (database for up to 50,000 objects)	■	■
RS 232 port for scanner	■	■
USB port for data transmission	■	■
ETC user software for PC	■	■
Measuring category CAT III 600V / CAT IV 300V	■	■
DKD calibration	■	■

Type	Article
PROFITEST MBASE	M520M
PROFITEST MTECH	M5200

Scope of delivery:

- Earthing contact plug insert (PRO-Schuko)
- 2-pole measuring adapter and cable for expansion into a 3-pole adapter (PRO-A3-II)
- Alligator clips
- Set of rechargeable batteries and charger
- DKD calibration certificate
- ETC software
- USB cable



Testing Packages

Type	Article	PROFITEST		Vario plug adapter set	F2000 carrying pouch	Master case	E-CHECK case	SP350 earth spike	TR50 drum	PRO-RLO II adapter	Metraflex P300	Battery set	Master charger
		MBASE	MTECH										
		M520M	M5200										
Testing Packages													
BASE Starter Package	M500M	■	—	■	■	—	—	—	—	—	—	■	■
TECH Starter Package	M500N	—	■	■	■	—	—	—	—	—	—	■	■
TECH Master Package	M500P	—	■	■	—	■	—	■	■	■	—	■	■
PRO Package E	M500R	■	—	—	—	—	—	—	—	—	■	■	■
XTRA Package E	M500S	—	■	—	—	—	—	—	—	—	■	■	■
XTRA Package XL	M500T	—	■	—	—	■	—	■	■	■	■	■	■
E-CHECK set	M500U	—	■	■	—	—	■	—	—	—	—	■	■

Accessories
for Packages

SP350 earth spike



VARIO plug adapter set



PRO-RLO II adapter



TR50 metal drum



F2000 carrying pouch



Master Case, Instrument



METRAFLEX P300

PROFITEST I S1 Article: GTM5101000R0001

Simulation model for testing the effectiveness of safety measures in low-voltage systems per DIN VDE 0100

This model can be used to simulate TT and TN systems with overcurrent protective devices, as well as with RCDs (systems with overcurrent protective devices can be equipped with normal and selective RCCBs).

In combination with the appropriate measuring and test instruments, all measurements and tests can be executed which are stipulated for safety testing of electrical systems of up to 500V with various system types and protective measures.

- Insulation resistance measurements
- Low-resistance measurements at equipotential bonding conductors
- Measurements for testing RCDs
- Loop impedance measurements
- Earthing resistance measurements
- Line voltage measurements

Optional accessories:

- S1A-4/10 contact protected jumper (package of 10):
GTZ3216000R0001
- Can be used with: PROFITEST MASTER, PROFITEST 0100S-II+, PROFITEST 2, PROFITEST ONE, C devices





With Factory Calibration Certificate



Set PROFITEST C / Metriso C
Article: M508A

PROFITEST C

Article: M521A



Test Instrument for DIN VDE 0100 / IEC 60364-6

Protective measures test instrument for loop resistance measurement, calculation of short-circuit current and display of suitable fuse ratings. In addition to complete testing for the effectiveness of RCCBs, the instrument is also capable of phase sequence analysis, as well as the measurement of voltage and frequency.

- Rugged 2-component housing with integral impact guard – perfect for use by on-site installation teams and an ideal supplement to the PROFITEST 204 in accordance with the new EN 60204 standard.
- Large, illuminated, anti-glare graphic display allows for clear, intuitive, menu-driven operation.
- Quick, easy operation with the help of just 5 keys
- Integrated measured value memory can be read out via the IrDa interface which is included as a standard feature.
- The instrument can always be kept current thanks to the update option.
- Stored measured values can be accurately assigned to their respective electrical circuits, distributors and buildings with the alphanumeric keypad.
- Go / No-Go indication via LEDs, and instructions in the display
- Integrated phase tester
- Stand, holders for test probes and cables, and a recharging socket for NiCd/NiMH batteries

PROFITEST C / METRISO C set:

- 3-pole adapter
- IrDa 0100 adapter cable
- KS17 measurement cables
- HC 40 hard case
- Batteries
- WinProfi PC software

An overview of the software's performance features is available on page 78 of the catalog and on the Internet (see order information for web address). Please refer the data sheet for further technical specifications.



YOUR 2ND INSTRUMENT

PROFITEST 2

Inexpensive, Universal Protective Measure Test Instrument for DIN VDE 0100 – 600 / IEC 60364–6

The PROFITEST 2 provides users with a test instrument for testing the effectiveness of protective measures in electrical systems per DIN VDE 0100–600.

- Easy to use
- Fast test sequences
- AMC – automatic measurement cable compensation using 4-wire method
- Low-resistance measurement
- Insulation measurement
- $Z_{LOOP} + I_k +$ fuse type



- Complete RCD testing (RCD types A and AC)
- Earthing measurement
- Phase sequence indicator
- Testing via earthing contact plug or 2-pole adapter

Scope of delivery:

- Earthing contact plug insert (PRO-Schuko)
- Cable for expansion into a 3-pole adapter
- 2 alligator clips / 2-pole measuring adapter
- Shoulder strap

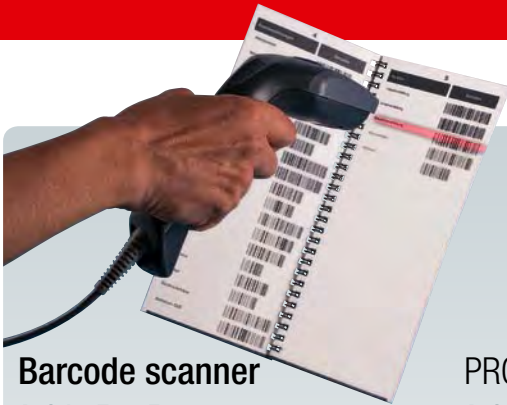


With Factory Calibration Certificate

Please refer the data sheet for further technical specifications.

Type	Languages	Article
PROFITEST 2a	D, GB, F, I, E, NL	M520W
PROFITEST 2b	GB, DK, S, FIN, D, N	M520X
PROFITEST 2c	E: Castellán, Catalan, Gallic, Basque, P, GB	M520Y
PROFITEST 2d	CZ, SLO, HR, D, PL	M520Z





Barcode scanner

Article: Z502F

Barcode Scanner with Laser and Coil Cable Laid Out Especially for the PROFITEST Master Series

For identifying system components and equipment. Equipment and system components can be logged by the PROFITEST, and acquired measured values can be allocated to them with the scanner.

- Scanning of barcodes from considerable distances
- Variable barcode lengths
- Increased scanning accuracy
- Green Spot technology
- Configuration of EAN13, CODE 39 and CODE 128 barcodes



PROFISCAN ETC

Article: Z502G

List with Barcodes, CODE 128, for Use with the Z502F Barcode Scanner and PROFITEST Master Series Testers

- Creation of system structures and distribution
- Acquisition of room designations
- Functions for navigating within the database for the PROFITEST Master series
- New entry and expansion of test texts
- "Go/No-Go" acknowledgment of report texts, inspections and much more
- Acquisition of defects / defects lists
- Space for self-generated barcodes in ETC software

Please refer the data sheets for further technical specifications.

ScanBase / ScanWrite I RFID

RFID Reader / Scanner

The RFID identification system is used to mark and identify tools and equipment.

- RFID read/write, Bluetooth (Z751F)
- RFID reader/scanner, RS 232 (Z751G)

See page 76 for further details.



METRAFLEX P300 Article: Z502E

Flexible AC current sensor for PROFITEST MASTER

- Broad range of applications, 3 measuring ranges: 3 A/30 A/300A AC
- Broad bandwidth of 20 Hz to 4 kHz for harmonic analysis
- Easy to use in tight spaces thanks to small sensor cross-section
- 9.9 mm and narrow end-cap (13.6 mm)
- High levels of safety for the operator, measuring category 1000 V @ CAT III, 600 V @ CAT IV and unlimited overload capacity
- Accurate measurement, even with low current values, thanks to large dynamic range and high sensor sensitivity
- Current sensor with IP 65 protection

Refer to pages 24 and 39 in the catalog for more flexible AC current sensors.

PROFITEST I DCII

Article: M523A

Test Instrument for AC/DC Sensitive RCCBs for PROFITEST 2

- Testing of the DC branch for AC/DC sensitive RCCBs – measurement of tripping current and time to trip for 30 and 300 mA RCCBs
- Measurement of loop impedance within the system without tripping the RCCB
- 3-pole adapter for systems without earthing contact sockets (Z523A)



PRO-... Plug Inserts

PRO-SCHUKO Article: GTZ3228000R001

Plug insert for Germany and other countries with appropriate plug systems

PRO-CH Article: GTZ3225000R001

Plug insert for Switzerland in accordance with SEV

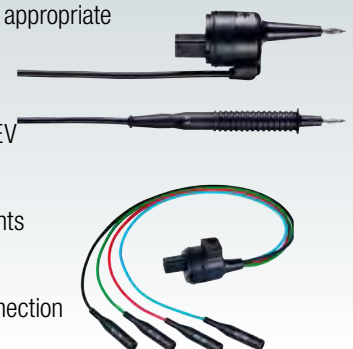
PRO-RLO II Article: Z501P

Plug inserts for PE and other similar measurements

PRO-UNI II Article: Z501R

Plug inserts with 3 connector cables for any connection standards

More information at:
www.gossenmetrawatt.com



METRAOHM 413 Article: M630A

Digital Low-Resistance Measuring Instrument for Measuring Protective Conductors, Equipotential Bonding and Much More

- Two measuring ranges from 0.01 to 1999 kΩ, zero balancing for measurement cables
- Indication of interference voltage
- Compact and rugged – for service calls and laboratory use

- Overvoltage protection – protects the instrument in the event of inadvertent connection to mains power
- Measuring category CAT III 300V / CAT II 600V
- IP 65 protection: dust-proof / water jets

- Scope of delivery:**
- Plug-in measurement cable
 - 9V battery



i More information at:
www.gossenmetrawatt.com

METRISO C Article: M541A



Battery Powered Insulation Resistance Tester for Measurements in Systems with Nominal Voltages of up to 1000V

- Measurement of insulation resistance and high value ohmic resistance with display of the measured value and the actual measuring voltage
- Measurements at bonding and protective conductors with low-resistance measurement
- Measurement of contact current
- Voltage and frequency measurement
- Optional temperature measurement, measurement of relative humidity
- All measurements are in compliance with the following regulations:
DIN VDE 0100, part 600;
DIN VDE 0701-0702;
EN 344; EN 1081
- Unambiguous limit value and Go/No-Go indication by means of LEDs, and display of useful information
- All measurement values are stored to memory with reference to their respective electrical circuit designations
- Rugged 2-component housing for everyday use

- Scope of delivery:**
- Measurement cables
 - WinProfi software
- Set PROFITEST C/METRISO C (M508A)**
Same as above, plus:
- PROFITEST C
 - 3-pole adapter
 - IrDa 0100 adapter cable
 - KS17 measurement cables
 - HC 40 hard case

An overview of the software's performance features is available on page 78 of the catalog and on the Internet (see order information for web address). Please refer the data sheet for further technical specifications.



Function	Measuring Range	Measuring Voltage	Nominal Current
Insulation resistance R_{ISO}	0.00 kΩ ... 99.9 GΩ	100V ... 1000V	1 mA ($R_N = 1 \text{ kW/V}$)
Resistance R_{Lo}	0.00 Ω ... 99.9 Ω	4.5 V (U_0)	$\geq 200 \text{ mA}$ ($R < 10 \text{ W}$)
Voltage U_{ISO}/U_{\sim}	0 V ... 1200V	—	—
Contact current I_B	0.00 mA ... 9.99 mA	—	—

With Software



With Factory Calibration Certificate



Profitest C Set / Metriso C
Article: M508A



METRISO® 500 D / 1000 D / 1000 IR / 1000A



Insulation Measuring Instruments for Electrical Systems with Warning in Case of Dangerous Contact Voltage

Please refer the data sheets for further technical specifications.



METRISO® 500 D



METRISO® 1000 D



METRISO® 1000 A

Type	Metriso 500D	Metriso 1000D/IR	Metriso 1000 A
Display	LCD	LCD	Analog
Insulation measuring voltage	100–250–500V	100–500V – 1000V (D) 250–500V – 1000V (IR)	50–100–250–500–1000V
Insulation measuring range	30 GΩ	30 GΩ	400 MΩ
R _{L0} measuring ranges	30 Ω	30 Ω	4 Ω
Limit value signals	Indicator lamp	Indicator lamp	Indicator lamp
Article	GTM5040000R0001	GTM5050000R0001/2	M540C

METRISO® 5024 Article: M540E

Analog Insulation Measuring Instrument, Low-Resistance Measuring Instrument and Voltmeter with Buzzer for Quick, Two-Hand Operation

- Ergonomic handling
- Illuminated scale
- Insulation measurement with 100, 250 and 500V measuring voltages

- Low-resistance measurements for protective conductor and equipotential bonding conductor resistance, and continuity
- Buzzer and blinking LED indicate alarm status for erroneous and implausible measurements
- Fluttering pointer as last-resort warning function

Scope of delivery:

- Insulation measuring instrument, ohmmeter and voltmeter
- Carrying pouch

Measuring Range	Intrinsic Uncertainty	Overload	Measuring Current	Short-Circuit Current
Insulation measurement, measuring voltage: 100 / 250 / 500 V				
0.1 ... 400 MΩ	2.5%	600V AC	> 1 mA	< 10 mA
Measuring error under reference conditions relative to scale length (l = 84.6 mm)				
Low resistance measurement, measuring voltage: 4.5 V				
0 ... 4 Ω	2.5%	250V DC	> 200 mA	—
Measuring error under reference conditions relative to upper range value (l = 74.9 mm)				
Voltage measurement, DC / AC (40 ... 200 Hz)				
0 ... 500V	2.5%	600V AC	450 kΩ	—
Measuring error under reference conditions relative to scale length (l = 73.3 mm)				

More information at: www.gossenmetrawatt.com



Please refer the data sheet for further technical specifications.

METRISO® 5000A/METRISO® 5000D-PI

High-Voltage Insulation Measuring Instruments with Test Voltage of up to 5000V DC

For non-destructive measurement of insulation resistance in electrical systems, as well as at machines, transformers, cables and electrical equipment utilized in, for example, locomotives, street cars and ocean going vessels, with selectable test voltages of up to 5 kV.



METRISO® 5000 A Article: M580A

Analog High-Voltage Insulation Measuring Instrument with Permanently Connected Measurement Cables and Test Probes

METRISO 5000 AK: The battery powered METRISO 5000 A is converted into the muscle powered METRISO 5000 AK by replacing the battery module with a crank generator.

- Extensive measuring range: 10 kΩ ... 1 TΩ
- Measuring range: 100kW ... 100MΩ (1000V)
- Measuring voltages: 100V, 250V, 500V, 1000V, 1500V, 2000V, 2500V, 5000V
- Measurements to 1000V per **DIN VDE 0413**
- Voltage measurement to 1000V
- Concise logarithmic display
- Guard terminal for the elimination of surface current

Scope of delivery:

METRISO 5000 A (580A)

- with battery pack:

METRISO 5000 AK (580C)

- with hand crank

METRISO 5000 A-Set (M580S) / METRISO 5000 AK-Set (M580T)

- KY 5000A
- GUARD 5000A
- F2000 universal carrying pouch



ISO KALIBRATOR 1 Article: M662A



Test Adapter for Insulation Measuring Instruments and Ohmmeters

Adapter for rapid, efficient testing of the accuracy of measuring instruments for insulation resistance and low-value resistors. Insulation measuring instruments with nominal voltages of up to 1000 V can be tested with the ISO Calibrator 1.

- Test range: 100 kΩ to 100 MΩ
- Protection: Housing: IP 50 / connector jacks: IP 20
- 5 m extension cable: Metriso 5024, 500D, 1000A, D, IR, Profitest Master series

Please refer the data sheet for further technical specifications.



METRISO® 5000 D-PI Article: M5810

Digital High-Voltage Insulation Measuring Instrument with Test Voltage of up to 5000V DC

Voltage Measurement to 1000V

Testing for absence of voltage at the device under test in systems of up to 1 kV can be performed with the voltage measuring range.

Discharging Capacitive Devices Under Test

Capacitive devices under test such as cables and coils, which may be charged by the test voltage, are discharged by the measuring instrument. Falling voltage value can be observed at the display.

Measurement per EN 61557, DIN VDE 0413

Nominal current amounts to 1 mA at a test voltage of 100, 250, 500 or 1000V.

Highly Insulated Measuring Cables

The highly insulated measuring cables are permanently connected for safety reasons in order to avoid danger resulting from an inadvertently disconnected cable.

Polarization index – PI

Polarization index testing is recommended for electrical machines. This procedure involves expanded testing of insulation resistance. DC measuring voltage from the METRISO 5000D-PI is applied to the insulation for a duration of 10 minutes. The measured value is documented after one minute, and after ten minutes. If the insulation is defective, the value measured after ten minutes is higher than the value measured after one minute. The relationship between the two measurement values is the polarization index. Charged material within the insulation is aligned due to the application of measuring voltage over a long period

of time, resulting in polarization. The polarization index indicates whether or not the charged material contained in the insulation can still be moved, thus allowing for polarization. This, in turn, is an indication of the condition of the insulation.

- Extensive measuring range: 0.1 MΩ ... 1 TΩ
- Variable test voltage, or in fixed steps: 100V, 250V, 500V, 1 kV, 1.5 kV, 2 kV, 2.5 kV, 5 kV
- Polarization index and absorption ratio
- Voltage measurement to 1000V
- Frequency measurement: 15 Hz ... 1 kHz
- Capacitance measurement: 0.1 ... 5 mF
- Measurement of electrical discharge
- Guard terminal for the elimination of surface current
- Supply power from mains, battery pack or external 12V power supply
- Backlit dot matrix display
- Digital display of measured values and limit values, characteristic curve display for polarization index
- Timer function: 1 s ... 100 min

Scope of delivery:

- Basic instrument with permanently connected measurement cables and test probes
- Alligator clips (5 kV version)
- Rechargeable battery (for M5810-0001 only) / mains power cable
- 5 m extension cable / interface cable

An overview of the software's performance features is available on page 78 of the catalog and on the Internet (see order information for web address). Please refer the data sheet for further technical specifications.



Guard 5000 A, Leadex 5000

Guard 5000 A (Z580C): guard cable and 1 alligator clip

Leadex 5000 (Z580D): 5 m extension cable



KY 5000 A

Article: Z580B

Alligator clips, 5 kV version

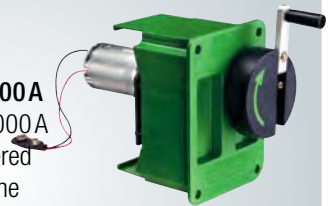


Generator 5000 A

Article: Z580A

Crank generator for Metriso 5000 A

The battery powered METRISO 5000 A is converted into the muscle powered METRISO 5000 AK by replacing the battery pack with a crank generator.



More information at:
www.gossenmetrawatt.com

GEOHM C Article: M590A

Battery Powered Earth Tester – also for Measurement of Soil Resistivity

- Compact, menu-driven instrument for the measurement of earthing resistance for 3 or 4-wire connection.
- Continuous monitoring of interference voltage, as well as auxiliary earth electrode and probe resistance with indication if allowable limit values are violated.
- Complete display of all required values at a large dot matrix display, or warning with 4 LEDs. Easy concise operation with only 4 keys.

- Measurement of earthing resistance in 5 ranges to 50 k Ω
- Voltage measurement: 10 ... 250 V
- Frequency measurement: 45 ... 200 Hz
- Battery monitoring and self-test
- Integrated memory with IrDA interface
- Earth tester per **DIN VDE 0413**
- Extremely rugged 2-component housing

An overview of the software's performance features is available on page 78 of the catalog and on the Internet (see order information for web address). Please refer the data sheet for further technical specifications.

With Software



GEOHM 5 Article: M591A

Earth Tester for All Known Measuring Methods

This battery powered measuring instrument can also be used to ascertain or measure soil resistivity and ohmic resistance in accordance with the current-voltage measuring method. Easy concise operation with only 4 keys.

- **Measurement of:**
 - ◆ Earth resistance
 - ◆ Selective earth resistance
 - ◆ Soil resistivity
 - ◆ Current (TRMS) with current clamp (optional)
- Conventional 3 and 4-pole measurement
- Selective single-clamp measurement (optional)
- 2-clamp measurement (optional)
- Battery operation is possible (optional)
- Digital display
- Rugged housing
- No balancing required
- Continuous monitoring of interference voltage and auxiliary earth electrode resistance with indication when allowable limit values are exceeded
- Data storage for 250 measurements (1000 measured values)
- Data interface for transmission of measured values to a PC

Scope of delivery:

- Black test cable, 4.5 meters
- Green test cable, 4.5 meters
- Red test cable, 15 meters
- Blue test cable, 20 meters
- 4 earth spikes
- 4 batteries per LR14
- Carrying strap
- Stackable system case

Optional accessories:

- Battery charger with 4 batteries Z591C
- LINK-G Software Z591D



More information at:
www.gossenmetrawatt.com

An overview of the software's performance features is available on page 78 of the catalog and on the Internet (see order information for web address). Please refer the data sheet for further technical specifications.



E-Set 3

Article: GTZ3301005R0001

Set of measuring accessories for measurements with earth spikes.

Set of measuring accessories consisting of:

- 2 reels
- 2 measurement cables, 25 m each
- 1 measurement cable, 40 m long
- 2 measurement cables, 3 m each
- 4 earth spikes (zinc plated)
- 2 spike pullers
- 1 hammer

Usable with following instruments: GEOHM C, GEOHM 5



E-Set 4

Article: Z590A

Set of measuring accessories for earth measurements, same as E-Set 3 but with earth drills instead of spikes

Set of measuring accessories consisting of:

- 2 reels
- 2 measurement cables, 25 m each
- 1 measurement cable, 40 m long
- 2 measurement cables, 3 m each
- 4 earth drills

Usable with following instruments: GEOHM C, GEOHM 5



E-Set 5

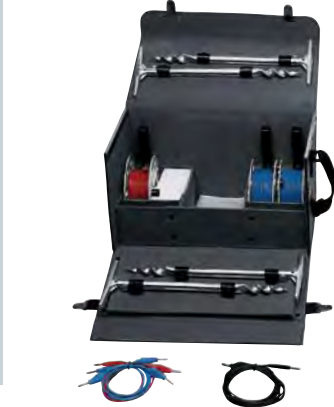
Article: Z590B

Extensively equipped earth measurement case for device and accessories.

Earth measurement case consisting of:

- 1 imitation leather case
- 1 drum with 25 m measurement cable
- 2 drums with 50 m measurement cable each
- 3 measurement cables, 0.5 m each
- 1 measurement cable, 2 m long
- 1 test clamp
- 4 earth drills, 350 mm long
- 1 dust cloth
- 2 pads with forms

Usable with following instruments: GEOHM C, GEOHM 5



E-Clip 1 / E-Clip 2

E-Clip 1
(Z591A)

Current clamp: 1 mA ... 1200 A, 1 mA/A, 40 Hz ... 5 kHz, 52 mm dia.

- Measuring range: 1 mA ... 1200 A
- Measuring category: 600 V CAT III
- Max. cable diameter: 52 mm
- Transformation ratio: 1000 A/1 A
- Frequency range: 40 Hz ... 5 kHz
- Output signal: 1 μ A ... 1.2 A

■ **Scope of delivery:** current clamp with connector cable (1.5 m) and laboratory safety plug

E-Clip 2
(Z591B)

Generator clamp: 0.2 ... 1200 A, 1 mA/A, 40 Hz ... 5 kHz, 52 mm dia.

Same as **E-Clip 1**, except:

- Measuring range: 0.2 A ... 1200 A
- Output signal: 0.2 mA ... 1.2 A

■ **Scope of delivery:** generator clamp with laboratory plug inputs

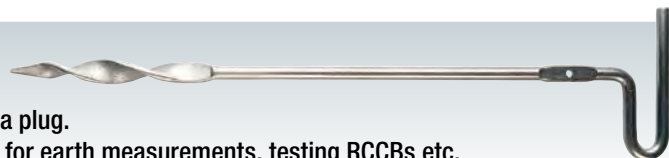


E-Clip

SP350 Article: GTZ3304000R0001

Earth spike, 35 cm long, with connector for 4 mm banana plug.

Can also be used as a probe or auxiliary earth electrode for earth measurements, testing RCCBs etc.



A3-16 ... 63 3-Phase Adapters

3-Phase Current Adapter for Connecting Test Instruments to 5-Pole CEE Outlets

- The adapter corresponds to the 5-pole CEE outlet with appropriate nominal current
- For 16 A nominal current: A3-16, 32 A: A3-32, 63 A: A3-63
- Phase sequence testing with signal lamps
- Testing the effectiveness of safety measures with five 4 mm contact protected sockets

- **A3-16** (GTZ3602000R0001)
- **A3-32** (GTZ3603000R0001)
- **A3-63** (GTZ3604000R0001)



Measuring Adapter PRO-A3 II

Article: Z5010

Measuring Adapter for Systems, 3-Phase Current, Phase Sequence

Scope of delivery:

- 2 alligator clips



Power Pack Article: Z591C

Battery charging is indicated by means of a charging display.

- Input: 230V AC/50 Hz
- Output: 4.8V DC/350 mA
- **Scope of delivery:** charger with 4 NiMH rechargeable batteries

AC Current Clamp Sensors



- **Z3512A (Z225A):** Current clamp sensor, 0.1 / 1 / 10 / 100 / 1000 A AC, selectable
- **WZ12C (Z219C):** Current clamp sensor, 1 mA ... 15 A AC, 1 mV / mA, 1 A ... 150 A AC, 1 mV / A, selectable



Measurement cable

TR25 (GTZ3303000R0001) Reel with 25 m measurement cable. Cable ends are equipped with banana plugs.

TR50 (GTY1040014E34) Metal drum with 50 m measurement cable. One end of the cable is integrated into the drum as a socket, and the other is equipped with a banana plug. The drum axle can be inserted with a single action.



TR50



TR25

KS24 Cable Set

Article: GTZ3201000R0001

Cable set for test instruments

The KS24 cable set includes a 4 m long extension cable with a permanently attached test probe at one end and a contact protected socket at the other end, as well as two alligator clips which can be plugged onto the test probe.



Rechargeable Battery Sets

- **NA101 (Z501M):** charger for 0100S battery set
- **Akku-Set 0100S (Z501B):** 6 special rechargeable NiMH batteries in a battery holder (1300 mAh)
- **NA102 (Z501N):** charger for battery set (including 4 NiCd baby cells)
- **Battery set for PROFITEST Master series (Z502H):** 8 rechargeable NiMH eneloop batteries
- **Charger (Z502D):** for Z502H battery set

Z502H



Z501B



Please refer the data sheet for further technical specifications.

T/F Sensor Article: Z541A

Adapter for temperature and atmospheric humidity measurement with infrared interface to the measuring instrument.

For determining ambient temperature and atmospheric humidity during floor measurements including:

- Leakage, insulation and surface resistance
- Temperature range: -10 ... +50° C
- Relative humidity measuring range: 10 ... 90%



VARIO Plug Adapter Set

Article: Z500A

Three self-retaining, contact protected test probes for the connection of measurement cables with 4 mm banana plugs, or with contact protected plugs for sockets with an opening of 3.5 to 12 mm, e.g. CEE, Perilex sockets etc.

For example, the test probes also fit the square PE jacks on Perilex sockets. Maximum allowable operating voltage: 600 V per IEC 61010.



1081 Probe

Article: GTZ3196000R0001

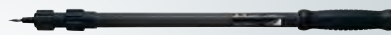
Floor Probe

This metallic tripod-type measurement electrode is used for:

- Determination of electrical resistance at elastic floor coverings in accordance with EN 1081
- Resistance measurement for insulating floors and walls in accordance with DIN VDE 0100-600



Telearn 1 Article: GTZ3232000R0001



Telescoping rod with test probe, and with a socket in the handle for quick and safe testing of, for example, lamps installed at excessive heights for the measurement of protective conductor resistance.

The rod is 53 cm long and can be telescoped to a working length of 120 cm and locked. Max. allowable voltage to earth: 1000 V.

E-CHECK Set Article: M500U

Included with E-CHECK case.

- Profitest M_{TECH} (M5200)
- VARIO plug adapter set (Z500A)
- Writing pad

E-CHECK case (Z502M):

Printed with contents layout.

Optional: **trolley (Z502N):** suitable for E-CHECK case

NEW in our product range



Carrying Pouches	Description	Article
F2000	Universal carrying pouch for measuring and test instruments, as well as accessories, dimensions: 380 x 310 x 200 mm	Z700D
HC30-C	Hard case for series C test instruments and accessories. Dimension: 394 x 294 x 106 mm	Z541C
HC40	Hard case for 2 series C test instruments and accessories. Dimension: 450 x 361 x 140 mm	Z541D
Master case, instrument	Stackable case with inserts for instrument and accessories. Dimension: 395 x 320 x 295 mm	Z502A



HC30-C/HC40



Master case, instrument



IrDa-USB Converter

Article: Z501J

Interface Adapter for Connecting Test Instruments to a PC (IrDA-USB)

Electrically isolated infrared interface for data transmission between a test instrument and a PC (USB).

- **Scope of delivery:** CD ROM with interface drivers

RS232-USB Converter

Article: Z501L

Interface Converter

The interface converter is used to connect any desired device with RS 232 interfaces to PCs which are equipped with USB ports only.

- **Scope of delivery:** CD ROM with interface drivers



PROFITEST I 204+ / 204L+ Article: GTM5027000R0001 / M505C

Tester for DIN VDE 0113, EN 60204-1

Portable test instrument for measurements per **EN 60204, DIN VDE 0113** and other similar regulations for machines and their electrical systems, and report generation.

Measuring instrument for:

- Protective conductor measurements
- Insulation measurements
- Residual voltage measurements
- Contact current

Scope of delivery for PROFITEST 204+:

- 1 test probe with integrated control unit for remote control of functions for protective conductor and insulation resistance measurement with permanently connected measurement cable
- 1 test probe with integrated fuse and permanently connected measurement cable
- 1 cable lug
- Mains power cable with earthing contact plug
- 1 factory calibration certificate
- 1 RS 232 bus cable for connection to the COM port

PROFITEST 204L+:

- same as PROFITEST 204, except
- With permanently connected 12 meter measurement cable
 - With Start/Store function activation in the test plug

An overview of the software's performance features is available on page 78 of the catalog and on the Internet (see order information for web address). Please refer the data sheet for further technical specifications.

With Factory Calibration Certificate



With Factory Calibration Certificate

METRAMACHINE I 204 / 2,5+, METRAMACHINE I 439 / 5,4+

MetraMachine 204/2.5+:
for DIN VDE 0113, EN 60204-1

Portable test instrument for measurements per EN 60204, VDE 0113 and similar regulations for machines and their electrical systems, and report generation.

MetraMachine 439/5.4+:
for DIN VDE 0660–500, EN 60439-1

Portable test system for testing low-voltage switchgear combinations per DIN VDE 0660–500, EN 60439-1.

Scope of delivery:

MetraMachine 204/2.5+ (504D)

- PROFITEST 204+
- PROFITEST 204HP
- Signal 204
- Leadex 204
- Caddy 204
- Test report

MetraMachine 439/5.4+ (504F)

- PROFITEST 204
- PROFITEST 204HV
- Signal 204
- Leadex 204
- Caddy 204
- Test report



Accessories for PROFITEST I204+

- **Signal 204 (Z504D):**
Combination indicator-signal lamp on a magnetic base plate for high-voltage tests in accordance with **DIN VDE 0104**
- **Cable Lug 204 (Z504E):**
Adapter for PE and ISO tests – plug-on cable lug for secure attachment of the test probe to terminals
- **Leadex 204 (Z504C):**
12 meter extension for the measurement cable with test probe to which the measuring circuit fuse is installed
- **Caddy 204 (Z504A):**
Trolley for basic instrument combined with high-voltage module, includes cover with side pockets
- **Claim 204 (Z504G):**
Set of various items used to warn unauthorized persons and for securing large areas, machines or machine components during the performance of high-voltage testing.
- **PROFI-MFII (Z504H):**
Interface adapter for PC keyboards
- **RS232-USB-Converter (Z501L):**
Interface adapter cable for connecting the RS 232 interface at the test instrument to the USB port of a PC for transferring data between the PC and the test instrument, e.g. for software updates
- **F2000 (Z700D):**
Universal carrying pouch for test instrument and accessories



Signal 204

RS 232 – USB



PROFI-MFII



F2000



Claim 204



Caddy 204

PROFITEST I204HP / 2.5 kV, PROFITEST I204HV / 5.4 kV

High-Voltage Module for Connection to the PROFITEST 204+

PROFITEST 204 HP-2.5 (505A)
2 kV high-voltage module for connection to the PROFITEST 204+ and expanded measuring options for high-voltage testing with 2 x UN or 1000V, from 500 VA transformer (max. 700 VA). Adjustable high-voltage: 1000 ... 2000V.

PROFITEST 204 HV-5.4 (505B)
5 kV high-voltage module for connection to the PROFITEST 204+ and expanded measuring options for high-voltage testing for EN 60439 and similar regulations. Adjustable high-voltage: 1000 ... 5000 V (max. 100 VA).



SECUTEST I SI Article: M702F
SECUTEST I PSI Article: GTM5016000R0001
for PROFITEST I204+ / 204L+ and METRISO 5000 – DPI

The SECUTEST SI / SECUTEST PSI serves strictly as an input devices for the PROFITEST 204+ and the METRISO 5000D-PI.

With the help of the SECUTEST PSI, test results can be printed out in the form of documented reports with date and time.



PHASECOP I 2 Article: GTM5202000R0001



Phase Sequence Indicator with LEDs and Contact Protected Plugs

Instrument for determining direction of rotation and phase sequence in three-phase systems. Phase sequence is acquired by means of an electronic circuit. The direction of rotation is indicated by one of two directional arrows, each of which is equipped with an LED. An LED is provided for each phase which indicates whether or not the phase conductor is live. The device can be used in all low-voltage systems.

- Complies with **DIN VDE 0413-7 / EN 61557-7** Indicates direction of rotation and phase

- Nominal range of use: 90 ... 660 V / 45 ... 1000 Hz

Scope of delivery:

- Phase sequence indicator
- 3 permanently connected measurement cables with contact-protected plugs
- 3 plug-on test probes
- 1 alligator clip

Optional accessories:

- F801 ever-ready case (GTY3172070P01)



Please refer the data sheet for further technical specifications.

DUSPOL®

EN 61243-3 (DIN VDE 0682-401)

DUSPOL® Voltage and Continuity Testers

- Data Hold / measuring point illumination
- Direct display without key acknowledgment – high impedance testing
- Impact resistant housing with IP 64 protection against dust and water



DUSPOL® digital LC



DUSPOL® analog plus



DUSPOL® expert

EN 61243-3	DUSPOL® – digital LC	DUSPOL® – analog plus	DUSPOL® – expert
Display	LED / LCD	Moving coil / LED	LED / LCD
Measuring category	CAT IV	CAT IV	CAT IV
Display levels	6 to 750 V	12 to 690 V	12 to 690 V
Continuity test	Buzzer + LCD, 200 kΩ	—	Buzzer + LED, 108 kΩ
Phase sequence test	LCD	LCD	LCD
Single-pole phase test	LCD	LCD	LCD
Polarity test	LCD	LED	LED
Load switched via pushbutton	$I_s = 200 \text{ mA (750 V}_{bc})$	$I_s = 250 \text{ mA (750 V}_{bc})$	$I_s = 200 \text{ mA (750 V}_{bc})$
30 mA RCCB tripping via pushbutton	■	■	■
Vibration alarm	■	■	■
Measuring point illumination	LED	—	LED
Protection	IP 64	IP 64	IP 64
Article	M611A	M611B	M611C



METRAPHASE 1 Article: M620A



Phase Sequence Indicator with Electronic Rotary Dial, Frequency Display and Nominal Line Voltage Display –Complies with Safety Regulations

The mechanical rotary dial based upon the Ferraris principle preferred by many users necessitates a large housing for the respective clearances and creepage distances. Our phase sequence indicator has an electronic rotary dial. LEDs arranged in a circular array not only indicate the direction of rotation, but rather line frequency as well by means of LEDs which light up in various colors. The presence of voltage at each phase is indicated with

additional LEDs in accordance with the regulations, as is nominal line voltage. The phase sequence indicator can be used as a 3-pole or a 2-pole indicator.

- Complies with **DIN VDE 0413-7 / EN 61557-7**
- Indicates direction of rotation and phase, as well as nominal line frequency and voltage
- Nominal range of use: 100 ... 690 V / 50 ... 400 Hz
- Power supply: 4 ea. mignon cell per IEC LR 6

Scope of delivery:

- 3 plug-in measurement cables with contact-protected plugs
- 3 plug-on test probes
- 1 alligator clip
- 4 batteries
- Carrying case

Optional accessories:

- **GH18 (GTZ3212000R0001):** rubber holster
- **VARIO plug adapter set (Z500A):** 3.5 to 12 mm dia.



Please refer the data sheet for further technical specifications.

PROFISAFE 400 / 690

EN 61243-3 (DIN VDE 0682-401)

Rugged Voltage, Phase, Continuity, Polarity Tester and Phase Sequence Indicator for up to 400 or 690 V in accordance with EN 61243-3 (VDE 0682-401).

- Double indication reliability
- Individually tested for dielectric strength



METRAVOLT 7A

EN 61243-3 (DIN VDE 0682-401)

Voltage Tester with Indication of Phase, Polarity and Direction of Rotation



METRAVOLT 12D + L

EN 61243-3 (DIN VDE 0682-401)

Voltage Tester with Indication of Phase, Polarity and Direction of Rotation

- Large backlit display



NEW in our product range

EN 61243-3	ProfiSafe 400	ProfiSafe 690	Metravolt 7A	Metravolt 12D+L
Nominal voltage	12 ... 400 V	24 ... 690 V	24 ... 740 V	8 ... 1000 V AC / 1500 V DC
Measuring category	CAT IV	CAT IV	CAT IV	CAT IV
Protection	IP 65	IP 65	IP 65	IP 65
Dielectric strength	> 5 kV, test voltage: 5 kV (1.2/50 ms pulse wave)			10 kV, test voltage: 6 kV (1.2/50 ms pulse wave)
Display levels	12/24/50/ 120/230/400 V	12/24/50/ 120/230/400/690 V	—	—
Input impedance	117 kΩ	202 kΩ	1 MΩ/57 kΩ	311 kΩ
Continuity test	0 ... 500 kΩ	0 ... 500 kΩ	—	0 ... 10 kΩ
Frequency range	0 ... 2000 Hz	0 ... 2000 Hz	0 ... 100 Hz	15 ... 10,000 Hz
Current	3.4 mA	3.4 mA	0.6/13 mA	3.2 mA
Display	LEDs	LEDs	Measuring movement + LCD + LED	LCD (backlit) + LED's
Power supply	Li storage battery with solar cell	Li storage battery with solar cell	None	9 V block battery
Functions	Voltage testing and measurement, plus phase, continuity, polarity and phase sequence indicator			
Article	M630E	M630F	M630D	M630G



More information at:
www.gossenmetrawatt.com

NEW
in our
product range



NEW
in our
product range



Technical Data	METRACLIP 41	METRACLIP 410	METRACLIP 61	METRACLIP 62	
Article	M320A	M320B	M311D	M311F	
Description	Electrical safety per IEC 61010. HOLD function. Suitable for measuring 4 to 20 mA process signals	Electrical safety per IEC 61010. HOLD function	Digital leakage current clamp DATA HOLD and maximum/minimum display.	Current clamp for measuring leakage and charging current. Leakage current clamp meter with specially shielded clamp opening for protection against external influences.	
Clamp opening (mm)	25	25	40	18	
CAT / Vmax (V)	III / 300	III / 300	III / 300	III / 300	
Display, digits	Digital	Digital	Digital + bar graph	Digital	
Current (A)	5 mA to 40 A	100 mA to 400 A	0 to 0.3 / 0 to 300 AC	200 m AC TRMS / DC 2000 m AC TRMS / DC 10 AC TRMS / DC	
Voltage (V)	—	—	—	—	
Frequency range for U / I (Hz)	DC; 15 to 400	DC; 15 to 400	50 to 60	50 to 60, 2 kHz cut-off frequency	
Peak memory	DATA HOLD	DATA HOLD	DATA HOLD	Min / Max; DATA HOLD	
Frequency measurement (Hz)	—	—	—	—	
Continuity	—	—	—	—	
Resistance (Ohm)	—	—	—	—	
Active power (W)	—	—	—	—	
Power Factor	—	—	—	—	
Accuracy	± 1% rdg. ± 5 digits	± 1% rdg. ± 5 digits	± (1.2% + 5 d) (- 5% ± 5 d)	1% ± 3 / 5 / 10 digits	
Power supply	9V block	9V block	2 ea. LR44 / SR44	2 ea. LR6 (AA)	
Dimensions (mm)	75 x 190 x 30	75 x 190 x 30	64 x 176 x 23	76 x 194 x 30	
Weight with battery	0.235 kg	0.235 kg	0.125 kg	0.35 kg	
Accessories included	—	—	2 button cell batteries, imitation leather pouch	Batteries, imitation leather pouch	

				
METRACLIP 63	METRACLIP 64	METRACLIP 70	METRACLIP 72	METRACLIP 75
M311G	M311H	M312A	M312E	M312H
Milliampere current clamps for measuring leakage current and process signal current (4 to 20 mA). The milliampere current clamp is extremely well suited for measuring small DC and AC current values beginning with 1 mA. It's equipped with a power saving circuit, a data interface, indication of exceeded measuring ranges and a flexible current sensor, and can even be used under very unfavorable mechanical conditions.		Clamp meter with 4½-place digital display. Automatic or manual measuring range selection, DATA HOLD and maximum/minimum display.	Digital clamp multimeter with direct and alternating voltage measurement, continuity test, buzzer, resistance Overvoltage category: CAT III @600 V; IP 40 protection	
			Frequency measurement, phase sequence	Temperature measurement
5	30	42	26	26
II/600–III/300	II/600–III/300	III/600	III/600 ... IV/300	III/600 ... IV/300
Digital	Digital	Digital	4000	4000
100 m/1000 m DC 100 m/1000 m AC 10 AC	100 m/1000 m DC 100 m/1000 m AC 10 AC	0.2–1400 DC 0.2–1000 AC RMS	0.2 to 600 DC/AC RMS	0.1 to 200 AC RMS 0.2 to 600 DC/AC RMS
—	—	0.2–600 DC 0.4–600 AC	0.2 to 900 DC/AC RMS	0.2 to 900 DC/AC RMS
50 to 60	50 to 60	45 to 450	45 to 65	45 to 65
DATA HOLD	DATA HOLD	Min/Max; DATA HOLD	Min/Max; DATA HOLD	Min/Max; DATA HOLD; PEAK
—	—	... 4 k	0.01 Hz ... 20 kHz	—
—	—	Acoustic	Acoustic ... 400	Acoustic ... 400
—	—	0.5 to 6 MΩ	0.0 to 40 kΩ	0.5 to 4 kΩ
—	—	—	240 kW	—
—	—	—	0.2 ... 1.00	—
1% ± 10 digits	1% ± 10 digits	2% ± 10 digits	1% + 2 digits	1% + 2 digits
4 ea. LR6 (AA)	4 ea. LR6 (AA)	9 V, IEC 6 LR61	9 V, IEC 6 LF22	9 V, IEC 6 LF22
19 x 113 x 28	33 x 170 x 24	97 x 254 x 46 mm	70 x 193 x 37 mm	70 x 193 x 37 mm
0.28 kg	0.28 kg	0.6 kg	0.26 kg	0.26 kg
IEC LR6 batteries (AA), carrying pouch, data recording cable		Battery, carrying pouch, 2 measurement cables with test probes	Battery, 2 measurement cables with contact-protected plugs and test probe, 1 alligator clip, pouch with carrying strap	Battery, 2 measurement cables with contact-protected plugs and test probe, 1 adapter for type K thermocouple, pouch with carrying strap

Type	Designation	PROFITEST						METRAOHM 413	METRISO							Article	
		IMBASE	MTTECH	2	C	204+	204L+		C	500D	1000D (IR)	5000D-PI	1000A	5000A	5024		GEOHM C
Modules, Adapters, Plugs, Plug Inserts, Cable Sets																	
DC-II	Test instrument for AC/DC sensitive RCCBs	—	—	■	—	—	—	—	—	—	—	—	—	—	—	—	M523A
S1	Simulation model per DIN VDE 0100	■	■	■	■	—	—	—	■	■	■	—	■	—	—	—	GTM5101000R0001
PSI	PSI module (printer, memory, RS 232 interface)	—	—	—	—	■	■	—	—	—	—	■	—	—	—	—	GTM5016000R0001
SECUTEST SI/PSI	Module (printer, memory, RS 232 interface)	—	—	—	—	■	■	—	—	—	—	■	—	—	—	—	M702F/ GTM5016000R0001
A3-16	3-phase adapter 5-pole for 16A CEE outlets	■	■	■	■	—	—	—	—	—	—	—	—	—	—	—	GTZ3602000R001
A3-32	3-phase adapter 5-pole for 32A CEE outlets	■	■	■	■	—	—	—	—	—	—	—	—	—	—	—	GTZ3603000R001
A3-63	3-phase adapter 5-pole for 63A CEE outlets	■	■	■	■	—	—	—	—	—	—	—	—	—	—	—	GTZ3604000R001
3-pole adapter	3-phase meas. adapter for Schuko plug or CH, UK	—	—	■	■	—	—	—	—	—	—	—	—	—	—	—	Z521A, B, C
VARIO plug	Plug set, 3.5 ... 12 mm dia. (3 pcs.)	■	■	■	■	—	—	—	—	—	—	—	—	—	—	—	Z500A
Telearm1	Telescoping rod for PE measurement	■	■	■	■	—	—	■	■	■	■	—	■	—	—	—	GTZ3232000R0001
TR25	Reel with 25 m measurement cable	■	■	■	■	—	—	■	■	■	■	—	■	—	—	■	GTZ3303000R0001
TR50	Drum with 50 m measurement cable	■	■	■	■	—	—	■	■	■	■	—	■	—	—	■	GTY1040014E34
SP350	Earth drill, 35 cm long	■	■	■	■	—	—	—	—	—	—	—	—	—	—	■	GTZ3304000R0001
KS24	Extension cable, 4 m	■	■	■	—	—	—	—	■	■	■	—	■	—	■	—	GTZ3201000R0001
KS-C	Cable set: measurement and high-resistance measurement cable for GΩ range	—	—	—	—	—	—	—	■	—	—	—	—	—	—	—	Z541F
PRO-Schuko	Plug insert for PRO-A3 adapter (Germany)	■	■	■	—	—	—	—	—	—	—	—	—	—	—	—	GTZ3228000R0001
PRO-CH	Plug insert for PRO-A3 adapter (Switzerland)	■	■	■	—	—	—	—	—	—	—	—	—	—	—	—	GTZ3225000R0002
PRO-RSA	Plug insert for PRO-A3 adapter (South Africa)	■	■	■	—	—	—	—	—	—	—	—	—	—	—	—	Z501A
PRO-A3 II	Meas. adapter for systems, 3-phase current, phase sequence	■	■	■	—	—	—	—	—	—	—	—	—	—	—	—	Z5010
PRO-RLO II	Plug inserts for PE and other similar measurements	■	■	■	—	—	—	—	—	—	—	—	—	—	—	—	Z501P
PRO-UNI II	Plug inserts: 3 connector cables for any connection standards	■	■	■	—	—	—	—	—	—	—	—	—	—	—	—	Z501R
IrDa-USB	IR to USB interface	—	—	—	■	—	—	—	■	—	—	—	—	—	■	—	Z501J
RS 232 – USB	Adapter cable, RS 232 to USB port	—	—	—	—	—	—	—	—	—	—	■	—	—	—	—	Z501L
Z580A	Crank generator	—	—	—	—	—	—	—	—	—	—	—	—	■	—	—	Z580A
KY 5000A	Alligator clips, 2 ea.	—	—	—	—	—	—	—	—	—	—	■	—	■	—	—	Z580B
Guard 5000A	Guard cable, 1 ea. with 1 alligator clip	—	—	—	—	—	—	—	—	—	—	■	—	■	—	—	Z580C
Leadex 5000	Extension cable, 5 m	—	—	—	—	—	—	—	—	—	—	■	—	■	—	—	Z580D
Current Clamps, Temperature Sensors																	
WZ12C	Current clamp sensor: 1 mA ... 15 A / 1A ... 150A AC, switchable	■	■	—	—	—	—	—	—	—	—	—	—	—	—	—	Z219C
Z3512A	Current sensor clamp, 0.1 / 1 / 10 / 100 / 1000A AC, switchable	■	■	—	—	—	—	—	—	—	—	—	—	—	—	—	Z225A
E-CLIP 2	Generator clamp: 0.2 ... 1200A, 1 mA/A, 40Hz–5 kHz, 52 mm dia.	■	■	—	—	—	—	—	—	—	—	—	—	—	—	■	Z591B
T/F sensor	Sensor for temperature and relative humidity	—	—	—	—	—	—	—	■	—	—	—	—	—	—	—	Z541A
Probes																	
1081 probe	Triangular probe for floor measurements	■	■	■	■	—	—	—	■	■	■	—	■	—	—	—	GTZ3196000R0001
Barcode Scanners / Printers																	
Z502F	Barcode reader/scanner, infrared with RS 232 interface	■	■	—	—	■	■	—	—	—	—	—	—	—	—	—	Z502F
Z721D	Barcode printer	■	■	—	—	■	■	—	—	—	—	—	—	—	—	—	Z721D
Z751G	RFID reader/scanner, (13.56 MHz) with RS 232 interface	■	■	—	—	—	—	—	—	—	—	—	—	—	—	—	Z751G
Chargers, Battery Sets																	
Z591C	Charger with 4 NiMH rechargeable batteries	—	—	—	—	—	—	—	—	—	—	—	—	—	—	■	Z591C
NA101	Charger for 0100S battery set	—	—	■	—	—	—	—	—	—	—	—	—	—	—	—	Z501M
NA102	Charger for battery sets for C series instruments	—	—	—	■	—	—	—	■	—	—	—	—	—	—	■	Z501N
Z502H	Battery set: 8 x NiMH rechargeable	■	■	—	—	—	—	—	—	—	—	—	—	—	—	—	Z502H
Pouches, Cases																	
F2000	Universal pouch	■	■	■	—	■	■	—	—	—	—	■	—	■	—	—	Z700D
HC30-C	Hard case for series C testers and accessories	—	—	—	■	—	—	—	■	—	—	—	—	—	—	■	Z541C
HC40	Hard case for 2 series C testers and accessories	—	—	—	■	—	—	—	■	—	—	—	—	—	—	■	Z541D
F837	Ever-Ready Case	—	—	—	—	—	—	—	—	■	■	—	■	—	—	—	GTZ3312000R0001

For sale in Germany only

TR-SPY Mark II Article: M681B

Fully Automated, 3-Phase Transformer-Turns Ratio Meter

The TR-Spy Mark II is a rugged, lightweight instrument which automatically measures turns ratio, voltage ratio, current consumption, and phase displacement. Thanks to internal adaptation to all possible 3-phase configurations, the instrument only has to be connected to the transformer once. Turns ratio characteristics can be viewed as a graphic representation. Even with the predecessor instrument, ease of use was unparalleled, and it's now been further optimized despite many additional functions.

- Highly accurate for the measurement of voltage and turns ratio, as well as current and phase displacement
- Can be switched back and forth between voltage and turns ratio
- Internal memory for measurement results
- One-time only hook-up to the transformer
- 5 measuring voltage ranges: 1, 10, 40 and 100V, and automatic
- Comparison with a nominal ratio
- Load on device under test < 0.05 VA
- Safety and protection circuitry
- Centronics (parallel) and RS 232 interfaces



- Emergency stop
- Rugged, lightweight, water-proof carrying case
- 2 year standard guarantee
- Self-calibration
- Switching output for tap changer
- Firmware update via Internet

Specifications

- Turns ratio measuring range: 0.8 to 13,000, resolution: 5 places, turns ratio accuracy: 0.08%
- Test current: 0 ... 1 A, accuracy: 1%
- Phase displacement measuring range: ± 180°, accuracy 0.05°
- Fully graphics compatible LCD with background illumination
- Piezo-electric keypad
- Interfaces: 9-pin RS 232 serial / 25-pin Centronics parallel
- Memory for measurement results: up to 12,000
- Line voltage: 100 to 240 V AC, 50 / 60 Hz, auto-ranging
- Selectable test voltage: 100V, 40V, 10V, 1 V AC (max. 1 A)
- Operating temperature: -10 to 60° C / storage temperature: -40 to 70° C



Scope of delivery:

Measurement cable set, 15 m (10 m extension, 5 m connector cable)

Optional accessories

- **TRO201** measurement cable extensions in various lengths
- **TRO203** external remote trigger



Micro Junior 2 Article: M681A

10 A Micro-Ohmmeter, Portable and Fully Automated

For testing and documenting connection and contact resistance

- Extremely accurate resistance measurement in the field
- Suitable for field use thanks to battery operation
- Fully graphics compatible display; self-calibration
- Internal memory for measurement results
- Integrated reports printer
- Can be expanded for turns resistance measurement (50 A, 50V) with WR50-1A

- Current ranges: 1 mA DC...10A DC, safety/protection circuit
- Single pushbutton operation; emergency stop
- Rugged, lightweight, water-proof carrying case

Resistance measurement

- Test current: 10 mA ...10 A DC, resolution: 4 places, accuracy: 0.1%

- Battery: 14.8 V / 6 Ah; external charger: 100 to 240 V AC 50 / 60 Hz
- Interface: 9-pin RS 232 serial
- Internal memory for 2000 measurement results
- Operating temperature: -10 to 60° C; storage temperature -40 to 70° C

Scope of delivery: 3 m measurement cable set, alligator clips



Micro Centurion 2 Article: M681E

200 A Micro-Ohmmeter for measurement of contact resistance at circuit breakers and connections.

- Extremely accurate resistance measurement in the field
- Single pushbutton operation / continuous current
- Graphics compatible display / self-calibration
- Internal memory for measurement results
- Safety and protection circuitry; emergency stop

- Rugged, water-proof carrying case
- Large input voltage range
- **Resistance measurement**
- Test current: 10 ... 200 A DC, resolution: 4 places, accuracy: 0.1%
- Input voltage range: 100 ... 205V AC, 45 ... 65Hz, max. 1 kW
- Temperature measurement (optional): 20... 140° C, resolution: 0.1° C, accuracy: ±0.7%
- Internal memory: up to 2000 measurement results

- Graphics compatible LCD with background illumination
- Interfaces: 9-pin RS 232 serial / 25-pin Centronics parallel
- Operating temperature: -10 to 60° C; storage temperature -40 to 70° C

Scope of delivery: 5 m measurement cable set, alligator clips

For sale in Germany only

TR-1/TR-1P Article: see below**Portable, Single-Phase Ratio Meter for Rough Use in the Field**

The TR-1 is a fully automated, single-phase transformer- turns ratio meter which is suitable for precise laboratory applications, as well as for use in the field. It's a rugged, lightweight instrument which automatically measures turns ratio, excitation current and phase displacement. Furthermore, the TR-1 measures the highest ratios with the greatest accuracy in its class in the CT mode down to very low power ratings. It's easy to operate, and can be used for all single and multiphase transformers.

Specifications

- Rugged, lightweight, water-proof carrying case
- Operation with rechargeable battery
- Rechargeable with mains power or 12V automotive adapter
- Graphic LCD panel with background illumination
- Internal memory for the last 100 measurements
- Up to 1000 measurements with fully charged battery
- Memory for up to 16 transformers for comparisons
- Continuity test/polarity test
- Fully automated measurement
- Function for comparison with nominal values
- Test currents of up to 1 A for current transformer test (CT)
- Lithium ion battery, 16.4V / 1.6Ah
- 2 year standard guarantee
- TR-1P with integrated printer

Measuring Parameters

- Turns ratio:
 - ◆ Range: 0.8 ... 100, resolution: 5 digits
 - ◆ PT accuracy (40V): $\pm 0.08\%$ rdg. ± 1 LSD
 - ◆ CT Accuracy (1 to 5V): $\pm 0.08\%$ rdg. ± 1 LSD
 - ◆ Range: 101 ... 4000, resolution: 5 digits
 - ◆ PT accuracy (40V): $\pm 0.08\%$ rdg. ± 1 LSD
- Test current, PT mode: 0 ... 0.1 A, CT mode: 0 ... 1 A, accuracy: ± 1 mA, resolution: 0.1 mA
- Output voltage, PT mode: 40V AC, CT mode: 1 to 5V, automotive mains input: 100 to 250V AC 50/60 Hz automatic, 12V DC (optional)
- Interface: RS 232
- Front panel: anodized aluminum
- Operating temperature: -10 to 60° C / storage temperature: -40 to 70° C

Scope of delivery:

- TR-1 (M681R): 5m measurement cable set
- TR-1P (M681K): 5m measurement cable set, printer module

**WR50-12/13/12R/13R** Article: see below**50 A Winding Resistance Meter, 2-Channel (WR50-12) or 3-Channel (WR50-13)**

The revolutionary charging and discharging circuit in the WR50 allows for extremely quick resistance measurement of highly inductive loads, at the same time assuring maximum safety.



- Charges inductive loads up to 1500 Henry
- High power supply: 50 A / 50 V DC
- Selectable current for resistance measurement: from 0.05 $\mu\Omega$ to 100 k Ω
- Fastest discharge unit on the market (more than 10 times faster)
- Fully automatic degaussing circuit (internationally unique)
- 3 temperature meas. channels/direct temperature correction of the resistors
- "Heat-run" test can be implemented (optional)
- Color LCD panel, backlit touch-screen
- Integrated printer (interval controlled print-outs)
- Interfaces: two USB and one RS 232
- Stores up to 10,000 complete measurement results
- Visual and acoustic indication of charge and discharge statuses
- Easy operation with touch-screen / water-proof housing
- Unsurpassed safety and protection circuitry
- Selectable test current: 50 ... 0.01 A DC/output voltage: 0 to 50V DC
- Input power: 90 ... 250V AC (1.5 kW max.) 50/60 Hz automatic
- Operating temperature: -10 to 60° C; storage temperature -20 to 70° C

■ WR50-12: M681M

■ WR50-12R: M681T

■ WR50-13: M681N

■ WR50-13R: M681P

**T-Rex/T-Rex R** Article: M681D/Z681G**Voltage Vector Measuring Option for the TR-Spy Mark II, 3-Phase, Fully Automated**

The T-Rex allows the operator to test the phase relationships of transformer windings while applying three phase voltage. This system is thus capable of precisely measuring the angular relationships of 3-phase transformers. This option is intended for transformers with phase relationships of other than 30 degrees or multiples thereof.

- Self-calibration; 3-phase voltage vector measurement
- One-time only hook-up to the transformer
- Load on device under test: < 0.05 VA
- Safety and protection circuitry; Centronics (parallel) interface
- Rugged, lightweight, water-proof carrying case
- 2 year guarantee
- Line voltage: 100 to 240V AC 50/60 Hz, auto-ranging
- Test voltage: 40V AC/0.5A max.
- Operating temperature: -10 to 60° C/storage temperature: -40 to 70° C



Type	Description	TR-Spy Mark II	TR-Mark IIR	Micro Junior 2	Micro Centurion II	WR 50-1A	WR 50-12 WR 50-13	Article
TR0201	10m measurement cable extension (also in various other lengths)	■	—	—	—	—	■	Z681D
TP02	Temperature probe	—	—	■	■	—	■	Z681B
TP01	Temperature probe	—	—	—	■	■	■	Z681E
TR0203	Trigger switch, length: 10m	■	—	—	—	—	—	Z681C
MJ0201	Kelvin clips, length: 3m	—	—	■	—	—	—	Z681A
Raytech-Toolbox.net	Free PC software for all Raytech devices. Always the most up-to-date version via free download	■	■	■	■	—	—	—
TR-Checkbox	Checkbox for checking ratio measurements and current measurements	■	■	—	—	—	—	M681L

TESTERS – Electrical Equipment

Test Instruments for Testing the Electrical Safety of Electrical Equipment at the Workplace and in Production

The fulfillment of legal requirements such as occupational safety legislation, medical device regulations and product safety law necessitates comprehensive measurements and testing in accordance with stipulations set forth in DIN VDE, as well as EN and IEC standards, for example:

- As an equipment manufacturer per IEC / EN 61010, 60601, 60950, 60335
- for servicing or as the operating company
 - ◆ of electrical equipment per DIN VDE 0701-0702
 - ◆ of medical devices per IEC 62353 (VDE 0751)
 - ◆ of welding equipment per IEC 60974-4



SECUTEST S2N+ / SECUTEST S2N+ I 10 Article: M7010-V031 / M7010-V032

With DKD
Calibration
Certificate

Test Instrument for BGV A3 and MPG

Universal test instrument for testing the electrical safety of electrical devices in accordance with occupational safety legislation, medical device regulations and BGV A3.

Automatic test sequences per:

- **VDE 0701-0702**
 - ◆ Testing of extension cables
 - ◆ Passive test sequences (device is not started up)
 - ◆ Active test sequences (device is started up)
 - ◆ Testing of computer devices which do not have to be disconnected from the mains during testing
- **IEC 62353 (VDE 0751),**
testing of electrical medical devices

Expanded functionality

- Safety for the user thanks to integrated personal protection – suitable for persons with basic electro-technical instruction
- Menu driven test sequences in compliance with the standards including automatic detection of protection classes I + II
- Voltage measurement at SELV PELV circuits included in the test sequence
- Convenient memory and report generating functions (optional with S2N+)
- Expanded data storage and reports generation via optional, external memory
- Expandable with optional accessories for 3-phase devices

Plus the following with SecuTest S2N+10:

- Protective conductor resistance test possible with 10 A test current
- Internal memory for 125 test results (entry of ID number and designation via barcode/Rfid)

Scope of delivery:

- Probe cable with test probe
- Alligator clip
- DKD calibration certificate
- Carrying strap

See **optional accessories** beginning on page 71.

- PC.doc-WORD/EXCEL, PC.doc-ACCESS and SECU-Up (beginning on page 78)



Photo Shows Optional SI Module

Starter Package

Article: M500K

- **SECUTEST S2N+**
- **SECUTEST SI:** memory module and interface
- **EL1:** adapter for testing single-phase extension cables
- **F2000 universal carrying pouch:** padded plastic carrying pouch with adjustable carrying strap

Master Package

Article: M500L

- **SECUTEST S2N+10**
- **SECUTEST SI:** memory module and interface
- **EL1:** adapter for testing single-phase extension cables
- **Brush probe:** for contacting exposed conductive parts which rotate or vibrate etc. during operation
- **F2000 universal carrying pouch:** padded plastic carrying pouch with adjustable carrying strap
- PC.doc-WORD/-EXCEL **software**



SECUTEST | SIII+ Article: M7010... / SECULIFE | ST Article: M693A...



Universal Test Instrument for Testing the Electrical Safety of Electrical Devices in Accordance with Safety Legislation, Medical Device Regulations and BGV A3, as well as Final Inspection Testing in Production

Automatic test sequences per:

- VDE 0701-0702, testing of electrical devices
- IEC 62353 (VDE 0751), testing of electrical medical devices
- IEC 60601, routine testing of electrical medical devices (optional/configurable)
- IEC 60335, routine testing of household appliances
- IEC 61010, routine testing of laboratory equipment
- IEC 61950, routine testing of IT equipment

Expanded functionality:

- Menu driven test sequences in compliance with the standards including automatic detection of protection classes I + II
- Automatic adaptation to either 110V / 60Hz or 230V / 50 Hz mains power
- Convenient memory and report generating functions
- Expanded data storage and reports generating via optional, external memory
- Expandable with optional accessories for 3-phase devices
- Application-specific configuration

Plus the following with Seculife ST:

- Up to 10 application parts can be connected
- Test sequence per IEC 60601 with SFC conditions

Standard models available from stock:

Secutest SIII+H

Seculife ST (M693A)

- Internal memory for 125 test results (entry of ID number and designation via barcode/RFID)
- Direct printing
- Detection of probe at protective conductor

Seculife ST HV (M693C)

- Including high-voltage test up to 6000V DC (at SC II devices)

Scope of delivery:

- Probe cable with test probe / alligator clip
- DKD calibration certificate

Optional accessories: see SECUTEST S2N+ / S2N+ I 10



SECULIFE | ST
with option for connecting up to 10 application parts



SECUTEST SIII with Optional SI Module

Designation	Basic Instrument = All 00 Features	M7010	M6930
		Standard Model	
		M7010-V013	M693A
Connectors and plugs for mains power and socket for device under test	Germany	■ B00	■ B00
	Germany, additionally with service socket	B01	B01
	UK	B02	B02
	France / Czech Republic	B03	B03
	Denmark	B05	B05
	China / Australia	B08	B08
	Switzerland	B09	B09
	Other countries upon request	Adapter set for international use (equipped with feature B01)	B11
User interface language	German	■ C00	■ C00
	English	C01	C01
	French	C02	C02
	Italian	C03	C03
	Spanish	C04	C04
	Czech	C05	C05
	Dutch	C06	C06
HV test	None	F00	■ F00
	With HV test, setpoint: max. 4 kV AC – test voltage output: max. 6.126 kV DC	■ F02	F02
AC test current for protective conductor measurement	10 A	G00	■ G00
	25 A	■ G01	G01
	Without AC test current	G02	G02
Test sequence for IEC 60601	None	KA00	
	With (recommended with J01)	KA01	■
Data memory for up to 125 tests	None	KB00	
	With	■ KB01	■
Detection of probe at protective conductor	None	KD00	
	With (including SK5 probe, 5m)	■ KD01	■
Direct printing	None	KE00	
	Direct printing after each measurement for automatic test sequences	■ KE01	■

SECUSTAR | **FM** Article: M7020-V001

SECULIFE | **SB** Article: M691A



Modular Measuring and Test System for User-Controlled Execution of Legally Required or Company Specified Work Procedures and Directives, e.g. Occupational Safety Legislation and Medical Device Regulations

- Suitable for use by trained persons
- **Predefined test sequences for**
 - ◆ Electrical devices (**DIN VDE 0701-0702**)
 - ◆ Electrical medical devices (**IEC 62353 / VDE 0751**)
 - ◆ Arc welding equipment (**IEC 60974-4**)
- Can be easily supplemented with individual test steps and test sequences
- Operation via color touch-screen
- Mains-independent operation with rechargeable batteries
- Data storage and data management for more than 2000 objects
- Integrated deadlines management
- Data interfaces: 4-socket USB hub for connecting PC, printer or sensor
- USB, CF connection for data exchange; Ethernet connection for hook-up within the LAN

Scope of delivery:

- Mains connection at the test instrument: via 16 A inlet plug – country-specific at the mains end
- Probe cable with test probe/alligator clip
- Compact flash card type II

See **optional accessories** beginning on page 71.

- Package of 3 wands (**Z753A**): for data entry via LCD touch-screen
 - Package of 2 retaining clips (**Z753B**)
 - DKD calibration certificate (**Z752A**)
- See **software** beginning on page 81.



SECULIFE | **SR** Article: M692A



Universal, PC Controlled Measuring Instrument

Used for testing the electrical safety of electrical medical devices after repair or modification, and for conducting periodic tests at regular intervals.

- Streamlined, time-saving tests thanks to direct measurement start-up by pressing a key
- USB data interface
- Connection of 10 application parts (via 4 mm sockets)
- Supports all measuring methods for leakage current (direct, differential, equivalent)
- Connection option for 10 A test probe (PGS10 – Z745Y)

- Test results displayed as a list by simply pressing a key
- Creates tree structure of devices under test (customer, building, room, floor, type etc.)
- Tree structure interchangeable via e-mail

ETC data management software (included)

- Tests can be remote controlled with ETC software
- Convenient reports generation (as PDF file, export to WORD or EXCEL)





MINITEST 3P MASTER



Scope of delivery:

MINITEST BASE

- Tester
- Probe cable

Additional features for MINITEST PRO/MASTER:

- USB cable
- CD ROM with software

Additional features for MINITEST 3P MASTER:

- Adapter: CEE 32 to Schuko
- Adapter: CEE 32 to 16 x 3
- Adapter: CEE 32 to 16 x 1
- Adapter: CEE 32 to 32 x 1

See optional accessories as from page 71.

- PC.doc-WORD/EXCEL PC analysis software beginning on page 79

MINITEST I Base
MINITEST I Pro

Article: see description

MINITEST BASE (M712C)

Test instrument for DIN VDE 0701 - 0702, for testing and measurement of repaired or modified devices by measuring:

- Protective conductor resistance
- Insulation resistance
- Protective conductor current – differential current method
- Contact current – direct measurement method
- Indication of limit value violations by means of color LEDs
- The probe cable is protected by means of a fuse link.

MINITEST PRO (M712D)

Test instrument for DIN VDE 0701-0702, for testing and measuring repaired or modified devices.

Same as MINITEST BASE plus:

MINITEST I Master
MINITEST I 3P Master

- Measured values appear at a large digital display.
- USB interface for report generation with data
- MINITEST software on CD ROM
- Extensive safety features
- RCCB in the plug on the mains cable

MINITEST MASTER (M712U)

Same as MINITEST PRO plus:

- Memory for 2000 tests with up to 10 measured values each

MINITEST 3P MASTER (M712X)

Same as MINITEST MASTER plus:

- CEE 16 A test socket and mains outlet, single and 3-phase
- CEE 32 A test socket and mains outlet, single and 3-phase



MINITEST BASE

MINITEST PRO

MINITEST MASTER



METRATESTER I 5+ Article: M700D

Instrument for Electrical Safety Testing of Electrical Equipment per DIN VDE 0701 – 0702

- Large digital LCD panel
- Mains connection testing with finger contact and indicator lamp
- Differential current measurement per DIN VDE 0701 - 0702
- All measured values appear clearly at a large digital display
- Exceeded limit values are indicated optically and acoustically
- Dimensions (B x H x T): 190 x 140 x 95 mm, weight: approx. 1.3 kg

- Panel mount variant: **METRATESTER 5-F-E (M700T)**

Scope of delivery:

- Factory calibration certificate

Test	Measuring Range
Protective conductor resistance	0 ... 19.99 Ω
Insulation resistance	0 ... 19.99 MΩ
Equivalent leakage current	0 ... 19.99 mA ~
Absence of voltage	0 ... 1.999 mA ~
Differential current	0.01 ... 19.99 mA ~
Line Voltage	207V ... 253V ~
Load current	0 ... 16.00 A ~



Overview: Testers

Type	MINITEST			METRA-TESTER 5+	SECUTEST		SECUTEST SIII+ / SECULIFE ST	SECUSTAR FM / SECULIFE SB	SECULIFE SR
	BASE	PRO	MASTER		S2 N+	S2 N+10			
Article No.	M712C	M712D	M712U	M700D	M7010-V031	M7010-V032	configurable	M7020-V001	M692A
Applications, Target Groups									
BGV A3, VDE 0701-0702, BetrSichV	■	■	■	—	■	■	■	■	■
For trained persons	■	■	■	—	■	■	■	■	—
Repairs and service	—	—	—	■	■	■	■	■	■
Production	—	—	—	—	—	—	■	—	—
Tooling expenditures	■	—	—	—	■	■	—	—	—
Medical technology: VDE 0751, IEC 62353	—	—	—	—	■	■	■	■	■
Medical technology: IEC 60601 (SFC conditions)	—	—	—	—	—	—	■	—	—
Interfaces									
USB (m = master, s = slave)	—	s	s	—	—	—	—	4 × m	s
Ethernet	—	—	—	—	—	—	—	■	—
CF connection	—	—	—	—	—	—	—	■	—
RS 232C	—	—	■	—	■	■	■	—	—
Test Sequences	—	—	—	—	Fixed, per standard		—	Programmable	—
Data memory (DUTs)	—	—	2000 meas. values	—	125 (PSI option: approx. 400; SECUSTORE: 1000)		—	Approx. 3000 *	—
Software (optional)	—	PC.doc, ETC		—	PC.doc, patmanager, ETC (SECUSTORE)		—	PC.doc, FM	ETC
Functions / Measurements									
Visual inspection	—	—	—	—	■	■	■	Programmable	—
Protect. conductor resistance	200 mA				200 mA / 10 A		200 mA / 10 / 25 A	200 mA	200 mA
Insulation resistance	■	■	■	■	Adjustable voltage				
Leakage Current Test Methods d = direct, E = equivalent, Δ = differential									
Protective conductor current	Δ (AC)	Δ (AC)	Δ (AC)	E, Δ (AC)	E, Δ (AC)	E, Δ (AC)	d (AC, DC, RMS) E, Δ (AC)	d (RMS) E, Δ (AC)	
Contact current	d (AC)	d (AC)	d (AC)	d (AC)	d (AC, DC, RMS)	d (AC, DC, RMS)	d (AC, DC, RMS) E (AC)	d (AC, DC, RMS) E, Δ (AC)	
Patient leakage current	—	—	—	—	d (AC, DC, RMS)	d (AC, DC, RMS)	d (AC, DC, RMS) E (AC)	d (AC, DC, RMS)	
Leakage current from application part	—	—	—	—	E (AC)	E (AC)	d (AC) E (AC)	E (AC)	
Device leakage current	—	—	—	—	d (AC, DC, RMS) E, Δ (AC)	d (AC, DC, RMS) E, Δ (AC)	d (AC, DC, RMS) E, Δ (AC)	d (RMS) E, Δ (AC)	
Function Test U = line voltage, I = current consumption, P = power; PF = power factor									
	—	—	—	U, I	U, I, P, PF				
Other Measurements									
High-voltage test	—	—	—	—	—	—	■	—	—
RCD test	—	—	—	—	—	—	—	■	—
Voltage measurement	—	—	—	—	■	■	■	—	—
Temperature: Pt 100 / Pt 1000 (optional)	—	—	—	—	■	■	■	—	—
Miscellaneous									
Display	LED	2-line LCD		Customer-specific	Black and white dot matrix			Color touch-screen	Black and white dot matrix
Operation	Rotary switch, save key			Rotary switch	Rotary switch, scroll keys			Touch-screen, keys	Keys
Mains power	230V/50Hz			230V/50Hz	230V/50Hz		230V/50Hz 115V/60Hz	Battery: 90V–250V 40Hz–400Hz	90V–250V 40Hz–400Hz

*> 3000 performance reduction



METRATESTER I 5+3P Article: M700K



Test Case for Testing Devices in Accordance with DIN VDE 0701 - 0702, can also be used as a Workshop Test Panel per DIN VDE 0104. For testing the electrical safety of single and 3-phase electrical equipment in accordance with the regulations:

- Protective conductor resistance
- Insulation resistance
- Equivalent leakage current
- Differential current
- Contact current
- Protective conductor current

The test case complies with “guidelines for equipment required for electrical installation operations” issued by the Federal Committee for Electrical Installations, ZVEH, WFE and electrical power utilities.

- **Mains connection:** The test case can either be connected to an earthing contact outlet with the two included power cables, or to a 16 A CEE mains outlet.
- **Test types:** DIN VDE tests without mains operation: protective conductor resistance, insulation resistance, equivalent leakage current; DIN VDE tests with mains operation at all single and 3-phase devices: differential current, contact current. Function tests with measurement of current consumption and voltage in phases L1, L2 and L3. Protective conductor measurement is performed correctly in accordance with DIN VDE 0104.
- **Contact surface for finger contact:** Protective conductor potential can be tested by means of a contact surface for

finger contact. The PE signal lamp lights up if a potential difference of more than 100 V is detected between the contact surface and the protective contact at the mains plug.

- **Differential current measurement:** for measuring protective conductor current without interrupting the protective conductor.
- **Convenient testing:** All safety and function tests are executed in a practical fashion by switching mains voltage or the individual phases to the device under test with selector switches.
- **Display functions:** All measured values are clearly displayed at the large, digital display. Exceeded limit values are also indicated optically, and in some cases acoustically as well.
- **Rugged case design:** Test case consisting of an aluminum shell and a removable, lockable lid; ample space is provided for connection adapters and operating instructions.

- **Dimensions:**
approx. 380 x 300 x 220 mm;
weight: approx. 8 kg

Scope of delivery:

- Test case including test instrument
- Mains cable with earthing contact plug and coupling socket
- Mains cable with CEE 16 A, 5-pole mains plug and coupling socket
- See optional accessories beginning on page 71.

Our
TOP MODEL



SECUTEST | 3PL Article: M704B**Test Case for Tests per BGV A3/GUV A2 at Single and 3-Phase Devices and Extension Cables per DIN VDE 0701-0702**

The test instrument is used for fast, safe periodic testing of electrical devices

Measurements per DIN VDE 0701-0702:

- Protective conductor resistance / insulation resistance
- Protective conductor current for SC I devices
- Contact current for SC II devices
- Absence of voltage at exposed, conductive parts (= contact current)

Measuring methods:

- Direct measurement, equivalent leakage current, differential current

Testing the electrical safety of extension cables

- Protective conductor resistance / insulation resistance
- Continuity, short-circuiting, polarity reversal

**Function test with power analysis for single phase DUTs**

Also suitable for high power DUTs with up to 16A. The device under test can be subjected to a function test with mains voltage via the integrated single pole earth contact outlet. The function test can be executed immediately after electrical safety testing has been successfully completed. The following are measured or calculated:

- Line voltage / differential current
- Current consumption / electrical energy
- Active and apparent power / power factor
- Duty cycle

Report generating functions

All of the values required for approval reports or device logbooks for electrical equipment (e.g. per ZVEH) can be measured. All measurement data can be documented and archived thanks to the measurement and test report which can be printed from, or stored to a PC.

Scope of delivery:

- Probe cable with test probe and plug-on alligator clip
- Adapter cable for connection to 16 A, 3-phase systems / 16 A lighting networks (Schuko)
- Test report

See **optional accessories** as from page 71.

PC analysis software: PC.doc-WORD/ EXCEL (beginning on page 78)



Applications for all SECUTEST Instruments

SECUTEST | 21F Article: M601A**Workshop Test Panel for Testing Devices in Accordance with DIN VDE 0701 - 0702**

The SECUTEST 21F test panel has been designed for the setup of test stations at shops specialized in electrical work. It's used for measurement and testing of electrical devices after repair or modification, as well as for periodic testing, in accordance with DIN VDE 0701 - 0702. The test panel is designed for wall mounting. It's equipped with a mains switch with undervoltage trigger and lock. Load currents of up to 25 A and line voltages of up to 500 V can be measured. Compliance with DIN VDE 0104 also assures flawless protective conductor measurements.

- Dimensions: 532 x 792 x 179 mm
- Weight: approx. 24 kg

In accordance with the guidelines for "workshop equipment for electrical installation operations" issued by the ZVEH / VDEW

Optional accessories:

- VL2E test adapter: testing of protective conductor and insulation resistance at devices and extension cables (as from page 73)

**SECUTEST | WP** Article: upon request**The workshop test panel for periodic testing is intended for measuring and testing single and 3-phase electrical devices and extension cables.**

Periodic testing in accordance with DIN VDE 0701 - 0702 must be performed by a qualified electrician with an appropriate test instrument. The test panel is mounted to the wall, and connected to the mains by means of a permanently laid cable and pre-fusing with 3 x 32 A. After installation, the test panel is locked with the included key. Performance of measurements and tests is quick and easy. Integrated online instructions inform the user regarding all required connections, necessary work steps, operator errors, measurement results and more in all measuring modes. Information and test results appear at the dot matrix LCD in plain text. Online help can be queried and displayed at the LCD for all measuring and test functions, and

for almost all settings. Schematic diagrams which illustrate proper connection of devices under test to the SECUTEST WP can be displayed as well.

Depending upon the device under test and usage, the following must be tested in accordance with these regulations:

- Protective conductor resistance
- Insulation resistance
- Equivalent leakage current
- Differential and contact current



SECUTEST | SI / SECUTEST | PSI

Article: see table

SECUTEST SI – Memory and Input Module

Test results from the test instruments are transmitted to the SI module directly via the interface. Test results are saved on-site as clear-cut, reliably documented measurement and test reports with date and time. Stored data can be transmitted to a PC at a later point in time independent of the test instrument, and can be processed with PC.doc-WORD/EXCEL/ACCESS software.

Optional Barcode Scanner –

A barcode scanner or RFID reader can be connected to the SI module, and existing IDs are transferred to the test reports for information purposes – time-saving, inexpensive acquisition of large volumes of data, e.g. for series measurements performed on devices.

SECUTEST PSI – Printer-Memory Module

Test results are transmitted to the PSI module, which is integrated into the instrument's lid, via a ribbon cable and are stored automatically. All measured values for 400 test reports can be stored to memory. Test results can be printed out on-site in the form

of documented reports which can be furnished with date, time and text entered at the keypad.

- Dimensions: 240 x 81 x 40 mm; weight: approx. 0.8 kg
- Batteries: 4 ea. 1.5 V IEC LR 6 (AA mignon)

SECUTEST PSI consumable materials:

- PS-10P = pack of 10 six meter recording charts
- Z3210 = 10 ribbon cartridges

Scope of delivery:

SECUTEST SI

- SI module

SECUTEST PSI

- PSI module
- 2 recording charts / ribbon cartridge
- Interface description



Type	Article
SECUTEST SI	M702F
SECUTEST PSI	GTM5016000R0001
PS-10P	GTZ3229000R0001
Z3210	GTZ3210000R0001

CEE Adapter Z745A Article: Z745A

Adapter for 3-Phase Consumers

The Z745A CEE adapter allows for quick and efficient testing of devices equipped with a CEE plug in accordance with VDE 0701/0702.

- CEE attachment outlets: 16 A/3-pole, 16 A/5-pole, 32 A/5-pole

- Safety outlets for 3-phase devices without permanently attached plug
- Protective conductor continuity test and insulation test for each phase, and combined phases, with rotary switch



SECUSTORE Article: Z745U

Memory Adapter for Use with SECUTEST... Testers

- **Data storage:** measured values for approx 1000 test reports. The flash memory module allows for battery-independent data storage.
- **Y-plug:** simultaneous connection of a barcode/RFID scanner or a keyboard adapter
- **Compatible:** SECUTEST S2N+ or S2N+10 and SECUTEST SIII+ or SECULIFE ST
- PC software WinProfi for communication and reports generation included

RS 232 -USB Converter

Article: Z501L

Interface Converter

The interface converter is used to connect test instruments and multimeters with appropriate adapters including an RS 232 interface to PCs which are equipped with USB ports only.

- A CD ROM including the required interface drivers is included.

SECULOAD

Article: Z745V

Test Adapter for Testing Open-Circuit Voltage at Welding Units per EN 60974

In combination with a multimeter, the test adapter is used for testing welding units in accordance with the EN 60974-4:2007 standard. This standard stipulates that peak values for open-circuit voltage may not exceed the limit values, regardless of the utilized settings.

Overview Tester Accessories

Type	MINITEST				METRATESTER 5 + 3P		SECUTEST					Secustar FM
	BASE	PRO	Master	3P Master	5 +	3P	SII +	SIII +	S2N +	S2N + 10	3PL	
General Accessories												
SECUTEST SI	—	—	—	—	—	—	■	■	■	■	—	—
SECUTEST PSI	—	—	—	—	—	—	■	■	■	■	—	—
RS 232	—	—	—	—	—	—	■	■	■	■	—	—
SECULOAD	—	—	—	—	—	—	■	■	■	■	—	■
CEE Adapter	—	—	—	—	—	■	■	■	■	■	—	—
SECUSTORE	—	—	—	—	—	—	■	■	■	■	—	—

AT3-III-E Article: Z745S

Adapter for Testing 3-Phase Current Consumers and Extension Cables in Combination with Safety Testers

Internationally unique: Portable test instrument add-on for safety measurements at 3-phase power consumers with automated measuring sequence in accordance with the standards. The portable safety tester, which can also be permanently mounted with the wall bracket, is used for measuring and testing electrical devices and extension cables.

- Testing of single and 3-phase consumers, and extension cables in combination with external test instruments

- Additional protection during testing of defective devices with integrated residual current monitoring and shutdown
- Function test for automatic shutdown by pressing a self-test button
- Prevention of short-circuits and blown mains fuses during testing thanks to pre-testing stage
- Automatic adaptation to the program selected at the test instrument with transfer of measured values
- In combination with SECUTEST: testing of protective conductor resistance, insulation resistance, equivalent leakage current, dielectric strength, differential current, contact current

- Dimensions: 405 x 300 x 220 mm (with lid), weight: approx. 6.7 kg



AT3-IIS / AT3-IIS32 Article



Adapter for Testing 3-Phase Current Consumers in Combination with SECUTEST Safety Testers

The safety tester is used in combination with SECUTEST test instruments for testing 3-phase devices after repair, as well as for periodic testing (DIN VDE 0701 - 0702).

It allows for fully automated or manual testing in accordance with the menu-driven test sequences included with the test instruments, with transmission of test results to, and analysis at SECUTEST test instruments.

Test types:

- **DIN VDE tests with mains operation**
 - Differential current, contact current
- **DIN VDE tests without mains operation**
 - Protective conductor resistance, insulation resistance, equivalent leakage current
- **AT3-IIS:** Article: Z745T

- **Equipment:** 5-pole CEE 32 A (max. 20 A) and CEE 16 A

- **Dimensions *:** 290 x 120 x 105 mm, weight: 2.4 kg

- **AT3-IIS32:** Article: Z745X
- **Equipment:** 5-pole CEE 32 A (max. 40 A) and CEE 16 A, single-phase earth contact outlet

- **AT3-IIS**
- **Dimensions*:** 285 x 220 x 128 mm, weight: 4.15 kg

*Dimensions (LxWxH) without cables and grommets



AT16-DI / AT32-DI Article: Z750A / Z750B

3-Phase, 16 / 32 A 3-Phase Current Adapter

CEE adapter for quick, efficient testing of devices which are equipped with 5-pole 16 A / 6h or 32 A / 6h CEE plugs.

The adapter is connected to a test instrument designed for testing portable devices in accordance with DIN VDE 0701-0702 or DIN VDE 0750/IEC 601, which is only equipped with an earthing contact outlet for connecting the device under test, and is capable of directly measuring protective conductor current.

The following tests can be performed on devices with CEE plugs with the help of the adapter:

- Testing of protective conductor continuity
- Insulation test
- Equivalent leakage current measurement
- Differential current measurement, L1-L2-L3-N
- Function test



VL2E Article: Z745W

Adapter for Testing Protective Conductor and Insulation Resistance at Devices and Extension Cables

The test adapter is intended for the performance of measurements and tests at electrical devices and extension cables with CEE plug connectors in combination with test instruments in accordance with the following standards: testing after repairs or periodic testing per DIN VDE 0701 - 0702. The following quantities can be tested with the adapter in combination with test instruments which are intended for the performance of the respective tests:

At electrical devices:

- Protective conductor resistance
- Insulation resistance (measurement of L1, L2, L3 and N short-circuited to PE)

- Equivalent leakage current

Plus the following at extension cables:

- Easy function test for single and 3-phase extension cables including testing for conductor continuity, short-circuiting and polarity reversal (clockwise rotation) with rotary selector switch using an insulation resistance measurement
- When performing tests, the adapter's connector cable is plugged into the test socket at the test instrument. The test instrument's probe cable is additionally plugged into the connector socket at the adapter when testing extension cables.



SECU-cal 10 Article: Z715A

Calibration Adapter for all SECUTEST and METRATESTER Instruments

The following measured values can be calibrated with the adapter:

- Insulation resistance
- Equivalent leakage current

- Differential current
- Contact current
- Protective conductor resistance (max. test current: 1 A)



EL1

Article: Z723A

Adapter for Testing Single-Phase Extension Cables

- Connector cable to the test instrument with handle / socket for plug inserts
- Pro-Schuko plug insert
- Plug insert for non-heating devices
- EN60320 C14 to EN60320 C6 plug adapter (non-heating devices, 10A to 2.5A IBM plug)
- Additional country-specific inserts available as well Not usable for high-voltage test!



PRO-CH plug insert (GTZ3225000R0001): plug insert for using the EL1 adapter in Switzerland

Overview Tester Accessories

Type	MINITEST			3P MASTER	METRATESTER 5 +	METRATESTER 5 + 3P	SECUTEST				SECUSTAR FM	
	BASE	PRO	MASTER				SII +	SIII +	S2N +	S2N + 10		3PL
General Accessories												
AT3-IIIE							■	■	■	■		
AT3-IIS							■	■	■	■		
AT3-IIS32							■	■	■	■		
AT16-DI												■
AT32-DI												■
SECU-cal 10	■	■	■	■	■	■	■	■	■	■		■
Temperature / humidity sensor												■
VL2E	■	■	■		■	■	■	■	■		■	■
EL1							■	■	■	■		■

i More information at: www.gossenmetrawatt.com



KS13 Article: GTY3624065P01

Cable Set for Connecting Test Instruments to the Mains

Cable set for connecting test devices to the mains without earthing contact sockets, and for connecting DUTs – consisting of:

- Coupling socket with 3 permanently connected cables
- 3 measurement cables, 3 plug-on pick-up clips
- 2 plug-on test probes



SK2/SK5 Article: see description

Probe Cable for Protective Conductor Measurement



SK2 (Z745D): probe cable with test probe and 2 m probe cable (not coiled) suitable for high-voltage testing

SK2W (Z745N): probe cable with test probe and 2 m probe cable (coiled) suitable for high-voltage testing

SK5 (Z7450): 5 meter probe cable for protective conductor measurement

SK5 (Z745K): 5 meter probe cable for protective conductor measurement (cable plus software)

- Automatic recognition of changing measuring points as software upgrade
- Go/No-Go indication display

Current Clamp Sensor Article: Z219C

Current clamp: 1 mA...15 / ... 150 A AC, switchable

- 1 mA... 15 A AC, 1 mV/mA
- 1 mA... 150 A AC, 1 mV/A

Scope of delivery:

- Current sensor clamp including permanently attached safety cable with connector plug

Measuring Range	CAT at V	Conductor Cross-Section	Transformation Ratio	Frequency Range	Intrinsic Accuracy ± (% rdg. + mA)
1 mA ... 15 AAC / 1 A ... 150 AAC	III at 300	15 mm dia.	1 mV / mA / 1 mV / A	45 ... 65 ... 500 Hz	3% + 0.15 mA / 2% + 0.1 A



Brush Probe Article: Z745G

The brush probe is suitable for contacting exposed conductive parts which rotate or vibrate etc. during operation.

The brush is plugged onto the test probe.

- Leakage current measurement (contact current)
- Protective conductor resistance measurement



PA4 Article: Z745L

Patient Connector Cable

Patient connector cable, 1.5 meters long, 12 conductors each with 4 mm plug



Z3409 Temperature Sensor Article: GTZ3409000R0001

Standard PT 100 Temperature Sensor for Surface and Immersion Measurements

Technical Data	
Sensor element	Pt100
Length of sensor element / sensor	130 / 1000 mm
Temperature range, °C	-40 ... + 600
Accuracy per DIN EN 60751 / IEC 751	Class A
Intrinsic accuracy at 0° C / 600° C	0.15 K
Transient recovery, T90 water/air	5s / 30s
Lead/insulation	Strands: 2 ea. 0.35 sq. mm / PVC



Carrying Pouches

F2000 (Z700D):
universal carrying pouch

■ Dimensions:
380 x 310 x 200 mm



Z740B

F2020 (Z700F):
universal carrying pouch, large

■ Dimensions:
430 x 310 x 300 mm



K2010

K2010 (Z504L):
aluminum case

■ Dimensions:
645 x 535 x 160 mm

Z740B (Z740B):
hard case for testers and accessories

■ Dimensions:
394 x 294 x 106 mm



BAGSTAR


BAGSTAR (Z700E):
ever-ready case

Overview Tester Accessories

Type	MINITEST				SECUTEST							
	BASE	PRO	MASTER	3P MASTER	METRATESTER 5 +	METRATESTER 5 + 3P	SI +	SII +	SZ +	SZ + 10	3PL	21F

General Accessories													
KS13	—	—	—	—	■	■	■	■	—	—	—	—	—
SK2	—	—	—	—	—	—	■	■	■	—	—	—	■
SK5	—	—	—	—	—	—	■	■	■	—	—	—	■
Current clamp sensor	—	—	—	—	—	—	■	■	■	—	—	—	—
Brush probe	■	■	■	■	—	—	■	■	■	—	—	—	■
PA4	—	—	—	—	—	—	—	■	—	—	—	—	—
Temp. sensor	—	—	—	—	—	—	■	■	■	—	—	—	—

Carrying pouches													
F2000	■	■	■	—	—	—	■	■	■	—	—	—	■
F2020	—	—	—	■	—	—	■	■	■	■	■	■	■
K2010	—	—	—	—	—	—	■	■	■	—	—	—	■
Z740B	■	■	■	—	—	—	—	—	—	—	—	—	—
BAGSTAR	—	—	—	—	—	—	—	—	—	—	—	—	■

 More information at:
www.gossenmetrawatt.com

SCANBASE / SCANWRITE | RFID

Article: see table

RFID reader/scanner, for test instruments with USB or RS 232 port

The RFID identification system is used to mark and identify tools and equipment. ID numbers can be written to RFID tags via a PC with the SCANWRITE. SCANWRITE, as well as other SCANBASE RFID reading devices, read out the code and forward it to our test instruments, in order to be able to allocate measured values and test results to the device under test in an unequivocal fashion.



Type	Article	Frequency	Standard	Connection
RFID reader/scanner, USB, 125 kHz	Z751D	125 kHz	–	USB
RFID reader/scanner, USB, 13.56 MHz	Z751E	13.56 MHz	ISO 15693	USB
RFID read/write, Bluetooth	Z751F	13.56 MHz	ISO 15693	Bluetooth Bluetooth – USB stick Bluetooth – RS 232 adapter
RFID reader/scanner, RS 232	Z751G	13.56 MHz	ISO 15693	RS 232

Accessories: Z751D, E and G RFID readers are preprogrammed to read the following RFID tags:

Type	Article	Frequency	Standard	Type	Qty.
RFID tag, ISO15693, 24 x 18 mm	Z751R	13.56 MHz	ISO 15693	22 mm, self-adhesive	500
RFID tag, ISO15693, 30 mm/3 mm	Z751S	13.56 MHz	ISO 15693	30 mm with 3 mm hole	500
RFID tag, ISO15693, pigeon ring	Z751T	13.56 MHz	ISO 15693	Pigeon ring, 10 mm	250
RFID tag (125 kHz), shape as requested	Z751U	125 kHz	–	20 mm	100

Barcode Printer Article: Z721D

Barcode and Label Printer for Connection to a PC, Including Software

- For the identification of equipment with barcode labels
- Prints smudge-proof, scratch resistant labels in all common sizes
- Ideal in combination with following barcode scanners: B3261, Z720A, Z751A
- MS Windows software

Label set

- Z722D:** quantity x width: 3 ea. 24 mm / 1 ea. 18 mm / 1 ea. 9 mm, 8 m long
- Z722E:** quantity x width: 5 ea. 18 mm, 8 m long

Scope of delivery: barcode printer / label set



Barcode Reader / Scanner

Article: Z720A / Z751A / GTZ3261000R0001

Barcode Scanner Z720A with Laser for Test Instruments with RS 232 Port

For identifying devices and system components. Devices and system components can be logged by our test instruments, and acquired measured values can be allocated to them with the scanner. See our barcode and label printers for water-insoluble labels as well.

- Scanning of barcodes from considerable distances
- Variable barcode lengths
- Improved reading accuracy
- The barcode scanner is configured for use with the following barcodes: EAN13, CODE 39 and CODE 128 (other codes upon request).

Barcode Reader Z751A with Laser for Test Instruments with RS 232 Port

For identifying devices and system components. Devices and system components can be logged by our test instruments, and acquired measured values can be allocated to them with the scanner.

B3261 barcode reader GTZ3261000R0001 with RS 232 port for direct connection to the SECUTEST PSI and the PROFITEST PSI-BC

- Trouble-free scanning of all common barcode types
- Insertion of decoded characters to any desired cursor position



Overview Tester Accessories

Type	MINITEST				SECUTEST							
	BASE	PRO	MASTER	3P MASTER	METRATERESTER 5 +	METRATERESTER 5 + 3P	SII +	SIII +	S2N +	S2N + 10	3PL	21F

SCANBASE / SCANWRITE RFID														
Z751D														■
Z751E														■
Z751G			■	■			■	■	■	■	■			
Z751F			■	■			■	■	■	■	■			

Barcode Readers / Scanners														
Z720A			■	■			■	■	■		■			
Z751A														■
B3261S			■	■			■	■	■		■			



SOFTWARE – Electrical Equipment

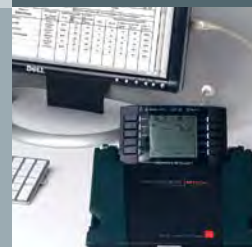
Data transfer, display, management and documentation – our software does it all.

Standards and regulations apply to all electrical systems and equipment.

Time required for well organized safety tests is minimized through the use of ultramodern test software.

GOSSEN METRAWATT can provide you with a complete spectrum of software:

beginning with a free report generating program right on up to comprehensive visual FM for commercial, infrastructural and technical administration of properties, buildings, building technology and systems.



Spezialbau - Systeme	
Verbindungen	
Spezialbau - Systeme	
Objektname	Spezialbau - Systeme
Objekt-ID	Spezialbau - Systeme
Objekt-Name	Spezialbau - Systeme
Objekt-Adresse	Spezialbau - Systeme
Objekt-Postleitzahl	Spezialbau - Systeme
Objekt-Telefon	Spezialbau - Systeme
Objekt-Fax	Spezialbau - Systeme
Objekt-E-Mail	Spezialbau - Systeme
Objekt-Webseite	Spezialbau - Systeme
Objekt-Objekttyp	Spezialbau - Systeme
Objekt-Objektgruppe	Spezialbau - Systeme
Objekt-Objektart	Spezialbau - Systeme
Objekt-Objektstatus	Spezialbau - Systeme
Objekt-Objektbeschreibung	Spezialbau - Systeme
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Objekt-Objektbeschreibung68	Spezialbau - Systeme
Objekt-Objektbeschreibung69	Spezialbau - Systeme
Objekt-Objektbeschreibung70	Spezialbau - Systeme
Objekt-Objektbeschreibung71	Spezialbau - Systeme
Objekt-Objektbeschreibung72	Spezialbau - Systeme
Objekt-Objektbeschreibung73	Spezialbau - Systeme
Objekt-Objektbeschreibung74	Spezialbau - Systeme
Objekt-Objektbeschreibung75	Spezialbau - Systeme
Objekt-Objektbeschreibung76	Spezialbau - Systeme
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Objekt-Objektbeschreibung81	Spezialbau - Systeme
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Objekt-Objektbeschreibung83	Spezialbau - Systeme
Objekt-Objektbeschreibung84	Spezialbau - Systeme
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Objekt-Objektbeschreibung86	Spezialbau - Systeme
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Objekt-Objektbeschreibung88	Spezialbau - Systeme
Objekt-Objektbeschreibung89	Spezialbau - Systeme
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Objekt-Objektbeschreibung96	Spezialbau - Systeme
Objekt-Objektbeschreibung97	Spezialbau - Systeme
Objekt-Objektbeschreibung98	Spezialbau - Systeme
Objekt-Objektbeschreibung99	Spezialbau - Systeme
Objekt-Objektbeschreibung100	Spezialbau - Systeme

Overview Instruments

Type	PROFITEST							SECUTEST						SECUSTAR	MINITEST			METRA							
	0100S-II	ONE	C	Master Series	SI-BC	PSI-BC	PSI-E	204	SII +	SECUSTORE	SECULIFE ST	SIII +	S2N +	S2N +10	3PL	SECUSTAR FM	SECULIFE SB	PRO	MASTER	3P MASTER	METRISO C	METRISO 5000D-PI	GEOHM C	Machine 439/5.4	Machine 204/2.5
ETC	—	—	—	■	—	—	—	—	■	—*	—*	—*	—*	—*	—	—	■	■	■	—	—	—	—	—	—
Winprofi	■	■	■	—	■	■	■	■	—	■	—	—	—	—	—	—	—	—	—	—	■	■	■	■	■
Secu-up	—	—	—	—	—	—	—	—	■	—	■	■	■	■	■	—	—	—	—	—	—	—	—	—	—
PC.doc-Word/Excel	■	■	■	■	■	■	■	■	—	—	■	■	■	■	■	■	■	■	■	■	■	—	■	■	■
PC.doc-Access	■	■	■	■	■	■	■	■	—	—	■	■	■	—	—	—	—	—	—	—	■	—	■	■	■
patManager	—	—	—	—	—	—	—	—	—	—	■	■	—	—	—	—	—	—	—	—	—	—	—	—	—

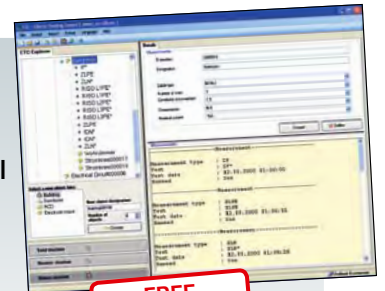
* With SECUTEST SI

ETC

Report Software for Following Testers: PROFITEST MASTER, MINITEST, SECULIFE SR, SECUTEST SI

ETC offers a wide variety of support options for data acquisition and management, reports generating and the control of test sequences.

- The software acquires all important data for reports in accordance with DIN VDE 0100–600, DIN VDE 0701–0702, DIN VDE 0751, IEC 62353.
- The test instrument and the PC can exchange data bidirectionally via a USB port (PROFITEST MASTER only).
- Test reports (ZVEH) can be generated automatically.
- Distribution structures (tree structure) can be individually defined.
- Data can be exported to Excel, ASCII and XML formats.
- User interface languages: D, GB, I, NL, F, CZ



FREE Download

WINPROFI

FREE Download

Software for Communication Between the Test Instrument and the PC

The software is freeware and runs under Windows 95, 98, NT4 and 2000.

It provides the following functions:

- Update test instrument firmware
- Download measured values
- Upload test reports
- Generate simple reports
- Export data from SECUSTORE as PDF file

SECU-UP Article: Z713C/Z713D

FREE Download

Firmware update for all SECUTEST SIII..., SIII+... and -SII+... Devices

Does not apply to: SECUTEST SII, -DC, -med, SECUTEST 0701 and SECUTEST 0701/0702S.

Software for reading out data from the SECUTEST and generating simple reports.

The software includes:

- Device software update resulting from further development – free of charge within a given primary version. Simply download and install the software, or send your instrument to GMC-I Service GmbH. For a fee – for instruments with older versions. Just ask our service department for an update appointment, and the instrument can be recalibrated at the same time if required.
- Language selection for operating and help menus, included languages: D, GB, F, I, E, NL, CZ
- Updating of optional device functions if enabled
- Enabling of options after purchasing an enabling code



Download at: www.gossenmetrawatt.com/english/ugruppe/softwarefortesters.htm



PC.doc-WORD

PC.doc-EXCEL

PC.doc-ACCESS

Can be used with Windows 2000 / XP

Report software as supplement to Microsoft Office Word and Excel.

PC.doc-WORD/EXCEL inserts test results and data entered at the test instrument input module into report or list forms. These can then be supplemented and printed out with Word/Excel.

System requirements:

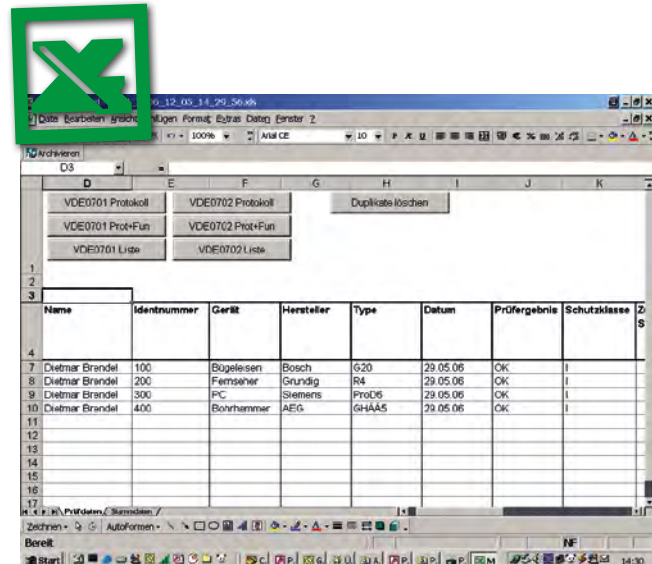
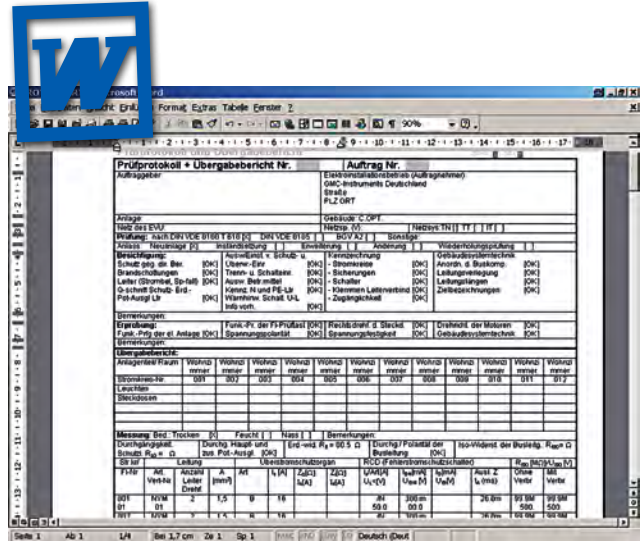
- Word 97, 2000, 7.0 – if reports are generated with Word
- Excel 2000 or higher – if reports are generated with Excel
- User interface: D, GB, F, FI, PL
- PC with at least 500 MHz and 256 MB RAM
- 1 available serial or USB port and a USB – RS 232 adapter

PC.doc-ACCESS: PC.doc-ACCESS is used for generating reports and managing test data as a supplement to Microsoft Office Access.

System requirements:

- Access 2000, 7.0
- Excel 2000 or higher – if reports are generated with Excel
- User interface: D, GB
- PC with 486 CPU or higher and at least 8 MB RAM
- 1 available serial or USB port

Type	Article
PC.doc WORD/EXCEL	Z714A
PC.doc ACCESS	Z714B
PC.doc upgrade	Z714C
PC.base upgrade	Z714D



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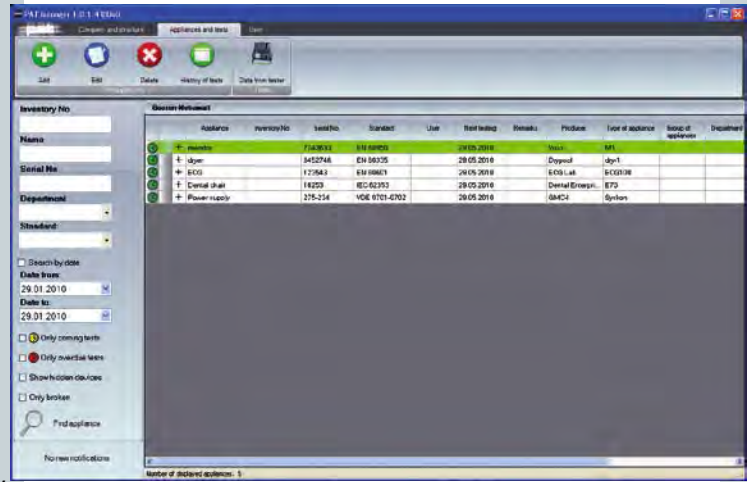
patManager

DATABASE AND TEST REPORT SOFTWARE FOR SECUTEST / SECULIFE ST AND (P)SI MODULE

- Easy and clear-cut archives/evidence of tested devices within the company/departments
- Creation of test history for every appliance
- Print-outs (printer or pdf) of test reports, inspection cards, stickers
- Automatic scheduling and verification of validity of tests
- E-mail notifications of overdue or incoming tests
- Modern and user-friendly interface

Please test the free trial version! *
<http://www.gossenmetrawatt.com/english/produkte/patmanager.htm>

* Limited to 5 appliances



Runs under Windows XP, Vista and Windows 7

Generation of test reports in PDF

Automatic data import from Tester-memory or (P)SI



Download at: www.gossenmetrawatt.com/english/ugruppe/softwarefortesters.htm



Overview Reports and Database Software

	ETC	Winprofi	SECU-Up	PC.doc-Word/Excel	PC.doc-Access	patManager
Article	FREE Download	FREE Download	FREE Download	Z714A	Z714B	Z712A
User interface language	D, GB, NL, I, F, CZ	D, GB	D, GB, F, I, E, NL, CZ	D, GB, F, FIN, PL (Excel portion: D, GB)	D, GB	D, GB, PL
Autonomous	■	■	■	Necessitates MS Word/Excel	Necessitates MS Access or Access Runtime	■
Type	Always complete	Always complete	Always complete	Always complete	Always complete	Always complete
Firmware update (tester software)	■	■	■	—	—	—
Generation of test reports	■	■	—	■	■	■
Generation of lists	■	—	—	■	■	—
List generator	—	—	—	—	With Access querying functions	—
Forms generator	—	—	—	—	—	—
Management of objects / tests	—	—	—	—	■	■
Document management / image viewer	—	—	—	—	—	—
Database management / navigator / search functions	—	—	—	—	Using Access functions	■
Database management / automatic deadline follow-up	—	—	—	—	—	■
Common functions as icons	—	—	—	—	—	■
Data saved back to tester if set up accordingly	■	■	—	—	■	—
Remote control	SECU LIFE SR	—	—	—	—	—
Hazard analysis	—	—	—	—	—	—
XML / Excel / ASCII import/export	■	—	—	—	—	—
Catalog function	—	—	—	—	■	—
Cost management	—	—	—	—	—	—
Network compatible	—	—	—	—	■	—
Barcode generation	—	—	—	—	■	—
Client options / outdoor function	—	—	—	—	—	—
Inventory management / error message module / maintenance / fire safety	—	—	—	—	—	—
Statistics	—	—	—	Error statistics, defects statistics	Error statistics, defects statistics	—
Special features:	Tree structure	—	Load another user interface language to the tester, enable options	—	—	—



LABORATORY POWER SUPPLIES

Laboratory power supplies from GMC-I Messtechnik, known as **GOSSEN KONSTANTERs**, combine modern circuit technology with a broad range of functions and absolute reliability.

Our KONSTANTERs can be ideally incorporated into demanding applications in the field of research and development, as well as into production and (continuous) test systems. Depending upon power, in-phase regulators and switching controllers are used with a high degree of efficiency.

Due to their exceptionally short response times, type SLP, SSP and ultramodern SYSKON KONSTANTERs are especially well suited for generating complex test signals, or for superimposing low-frequency signals to the output via analog control inputs.

Data storage provided by SSP and SYSKON models makes it possible to save UI time profiles, and to run the respective sequences automatically.

Depending upon the device, available interfaces include analog, RS 232, IEEE 488 (GPIB) or USB.



Short Response Times

Accurate Measured Value Settings

Wide-Ranging Output Power

Expanded Protective Functions

Interface Variants

Free Operating Software (remote)





Sensational Response Times

Extremely Accurate Measured Value Settings

High Output Power

Extensive Safety Functions: OVP, OCP

Interface Variants: ANIF, RS 232, USB or GPIB

Sink Function with Continuous Power

Free Operating Software (remote)

Programmable Test Signal Generator

SYSKON P Series Article: see table

SYSKON P series KONSTANTERs (system KONSTANTER, programmable) are single output, computer controlled laboratory power supplies for demanding professional use in R&D, production and test systems.



Equipped with active power-factor control (PFC), these models deliver 1500, 3000 or 4500 W of power, depending upon device type, at up to 60 V and max. 60, 120 or 180 A with characteristic UIP curve. All SYSKON models include special switching controller technology and matching status controllers, thus assuring high dynamics and short response times of less than 2 ms. The high precision

setting range for output voltage and output current can be restricted by specifying setting limits. The analog interface is equipped with two programmable trigger inputs and three signal outputs, which can be linked to various device functions for indication, or for controlling external devices and an auxiliary power output. Monitor outputs and control inputs for voltage and current setpoints are also available. Sensing leads allow for auto-sensing operation at the power consumer. Strict menu-driven operation supports highly diverse programming functions. The devices are transformed into freely programmable test-signal generators by means of an expanded sequence memory and extra functions.

- Sequence functions with sequence control for creating voltage and current sequences
- Comprehensive calibration report

Scope of delivery:

- SYSKON KONSTANTER
- Mains power cable (for SYSKON P1500 only)
- USB adapter cable (90° angle)
- Installation set for rack mounting
- DKD calibration certificate
- CD with driver and operating software, and brochure as PDF file

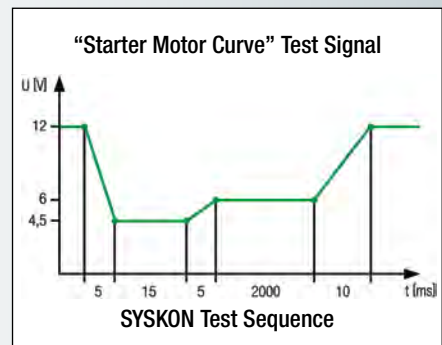
Optional accessories – see page 93

- IEEE 488 interface
- 3-phase cable for SYSKON P3000 and P4500
- SYSKON transporter

Software – see notes on page 91

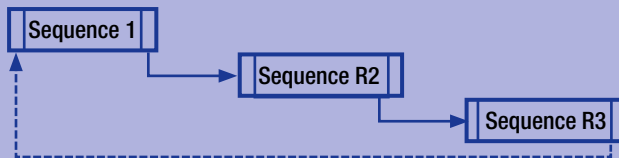
- GM-SYSKON-SFP operating software (free download)

- Auto-ranging output with 1500, 3000 or 4500 W
- Very short response times (rise and fall times)
- Excellent dynamic control parameters
- Output: voltage and current regulated output
- Characteristic UIP curve
- Minimal residual ripple
- Mains input with power-factor control
- Highly efficient, low power loss
- Output on/off function
- Dynamic sink mode operation
- Lockable controls
- Master-slave operation for parallel and series connection
- Overvoltage, overcurrent and overtemperature protection

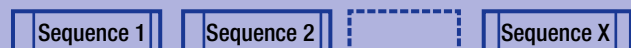


- **Setup memory:** 1536 / 1700 memory locations for sequence functions

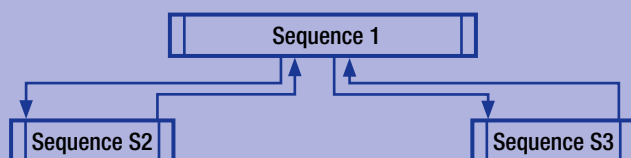
Sequence stringing



- **Setup memory:** 12/15 memory locations for complete configurations

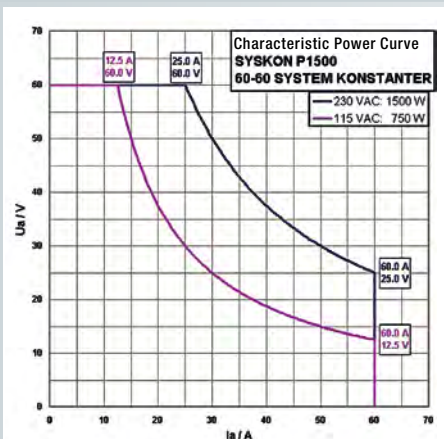


Retrieval of sub-sequences from primary sequences



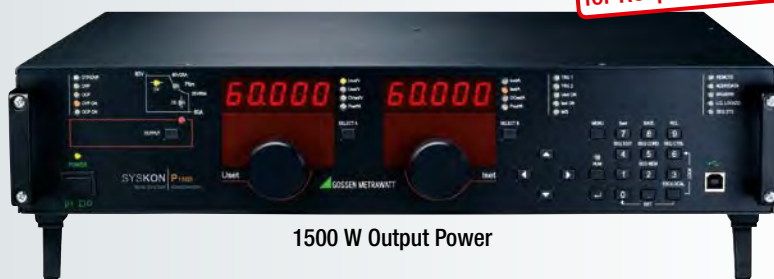
More information at:
www.gossenmetrawatt.com

Characteristic UIP Curves

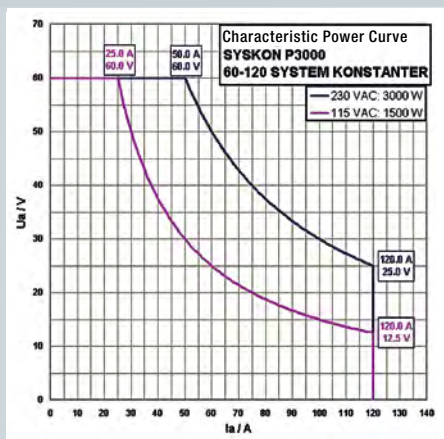


SYSKON P1500

Our World Champion
for Response Times



1500 W Output Power

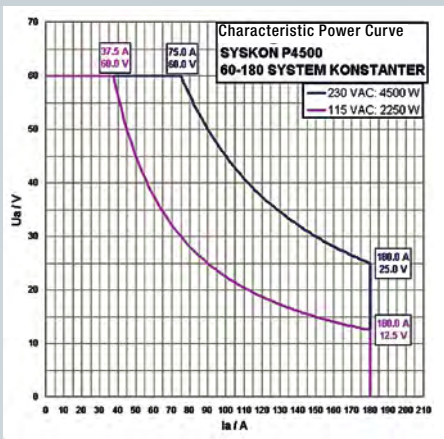


SYSKON P3000

Our World Class
All-Rounder



3000 W Output Power



SYSKON P4500

Our Strongest
Key Player



4500 W Output Power



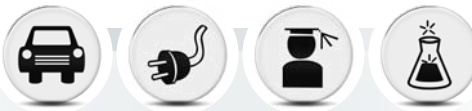
Type	Power	Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. in kg)	Article
	P_{out} [W]	U_{set} [V]	I_{set} [A]	Benchtop Instrument	19" Rack		
SYSKON P1500 (1500 W)	1500	0...60	0...60	447 x 102 (88) x 541 (501)	2 standard height units x 501	10	K353A
SYSKON P3000 (3000 W)	3000	0...60	0...120	447 x 191 (177) x 541 (501)	4 standard height units x 501	16	K363A
SYSKON P4500 (4500 W)	4500	0...60	0...180	447 x 191 (177) x 541 (501)	4 standard height units x 501	20	K364A
IEEE 488 interface	—	—	—	—	—	—	K384A
3-phase mains cable, 3.5 m	—	—	—	—	—	—	K991B
SYSKON Transporter	—	—	—	—	—	14	Z116A

**Extremely Short
Response Times**

**Programmable
Test Signal
Generator**

SSP 32N KONSTANTER 120...320 Article: see table

SSP32N KONSTANTER 120, 240 and 320 devices (single output system power supplies) are single output computer controlled laboratory power supplies for universal use in R&D, production and testing.



BET circuit technology (bidirectional energy transformation) allows for response times of less than 1 ms almost entirely independent of load (< 4 ms with 80 V device) in a compact format. The analog interface includes monitor, auxiliary power and programmable signal outputs, as well as programmable trigger and setpoint inputs.

- Auto-ranging output with 120, 240 or 320 W
- Extremely short response times thanks to BET technology
- Characteristic UIP curve
- Extraordinary functionality
- Comprehensive test report
- Minimal power loss
- Output: voltage and current regulated output
- Increased output power for brief intermittent periods
- Dynamic sink mode operation
- Excellent dynamic control parameters

- Master-slave operation for parallel and series connection
- Minimal residual ripple
- Output on/off function
- Lockable controls
- Sequence functions with sequence control for creating voltage and current sequences
- Overvoltage, overcurrent and overtemperature protection
- Calibrating procedure for menu-driven balancing
- Floating output terminals at front and rear panels
- Can be electrically and mechanically combined into multi-output devices
- RS 232 interface (complete device operation, standard equipment)
- Analog interface (standard equipment)

- Driver software (standard equipment)
- IEEE 488 interface (optional)
- GM SSP-SFP operating software (standard equipment)

Scope of delivery:

- SSP KONSTANTER
- Mains power cable
- Test report
- Installation set for rack mounting
- GM SSP-SFP operating software (website)

See optional accessories and software beginning on page 91

- IEEE 488 / RS 232 interface
- Instructions for mounting several series SSP 32N and SLP 32N KONSTANTERs

120 W / 240 W

320 W



- Sequence memory: 245 locations for sequence functions

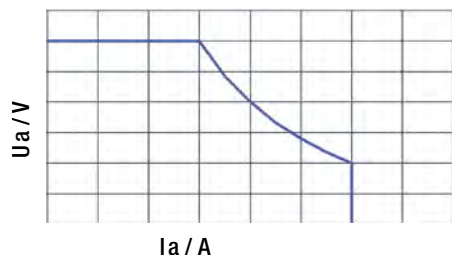
Sequence 1

Sequence 2

Sequence X



UIP curve



Type	Power	Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. in kg)	Article
	P_{out} [W]	U_{set} [V]	I_{set} [A]	Benchtop Instrument	19" Rack		
120 W	120	0...20	0...10	221.5 x 102.0 x 397.5	½ 19" x 2 standard height units x 400	2.8	K320A
	120	0...40	0...6				K321A
	120	0...80	0...3				K322A
240 W	240	0...20	0...20	221.5 x 102.0 x 397.5	½ 19" x 2 standard height units x 400	2.8	K330A
	240	0...40	0...12				K331A
	240	0...80	0...6				K332A
320 W	320	0...32	0...18	221.5 x 102.0 x 397.5	½ 19" x 2 standard height units x 400	2.8	K334A
IEEE 488				—	—	—	K380A





SSP 62N/64N KONSTANTER 500...3000 Article: see table

SSP KONSTANTER 500, 1000, 2000 and -3000 devices (single output system power supplies) are single output computer controlled laboratory power supplies for universal use in R&D, production and testing.

Special circuitry allows for jumping from 0 V to nominal voltage ($0V \rightarrow U_{Nom}$) and back again ($U_{Nom} \rightarrow 0V$) under nominal load conditions within very short response times of less than 10 ms.

The analog interface includes monitor and auxiliary power outputs, as well as programmable trigger and setpoint inputs.

- Auto-ranging output with 500, 1000, 2000 or 3000 W
- Very short response times thanks to special circuit concept
- Excellent dynamic control parameters
- Characteristic UIP curve
- Extraordinary functionality
- Minimal power loss
- Output: voltage and current regulated output
- Increased output power for brief intermittent periods

- Minimal residual ripple
- Dynamic sink mode operation
- Output on/off function
- Lockable controls
- Sequence functions with sequence control for creating voltage and current sequences
- Master-slave operation for parallel and series connection
- Overvoltage, overcurrent and overtemperature protection
- Analog interface
- Rear panel connections:

Mains input, 62 N: inlet plug with protective contact – L + N + PE

Mains input, 64 N: screw-terminal block – 3 L + N + PE

Output: bus bars with holes for M8 screws and 4 mm holes



Scope of delivery:

- SSP KONSTANTER
- Mains power cable (SSP 62 N)
- Installation set for rack mounting
- GM SSP-SFP operating software (website)
- Driver software

See optional accessories and software beginning on page 91.

- IEEE 488 / RS 232 interface
- RS 232 interface
- 3-phase cable for SSP 64N models

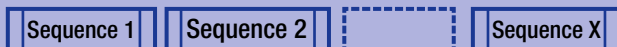
SSP 64N Models, 2000 and 3000 W



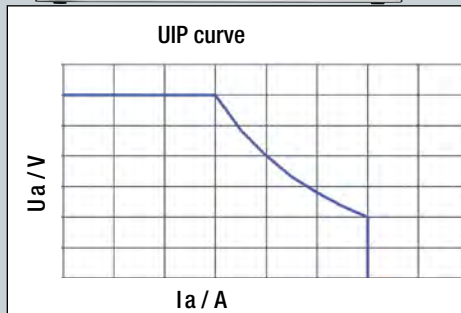
SSP 62N Models, 500 and 1000 W



■ Sequence memory: 245 locations for sequence functions



Type	Power	Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. in kg)	Article
	P_{out} [W]	U_{set} [V]	I_{set} [A]	Benchtop Instrument	19" Rack		
500 W	500	0...52	0...25	449 x 101 x 500	2 standard height units x 500	12	K344A
	500	0...80	0...12.5				K341A
1000 W	1000	0...52	0...50	449 x 101 x 500	2 standard height units x 500	13	K345A
	1000	0...80	0...25				K343A
2000 W	2000	0...52	0...100	449 x 190 x 500	4 standard height units x 500	22	K352A
	2000	0...80	0...50				K351A
3000 W	3000	0...52	0...150	449 x 190 x 500	4 standard height units x 500	28	K362A
	3000	0...80	0...75				K361A
IEEE 488 / RS 232 interface				—	—	—	K382A
RS 232 interface				—	—	—	K383A
3-phase mains cable, 3.5 m				—	—	—	K991B



MSP 64D KONSTANTER Article: see table



The MSP KONSTANTER (multi-output system power supply) offers extensive flexibility, ease of operation and economy for universal use in R&D, production and testing.

2-Quadrant Working Range (source & sink)

Up to 8 Output Channels

Individualized Configuration

The MSP KONSTANTER is a modular, manually operated and computer controlled DC power supply. The basic unit with integrated auxiliary power supply and cooling fan is equipped with IEEE 488 and RS 232 interfaces, and accepts up to four single or 2-channel plug-in power supply modules, and one control module. The control module allows for manual operation of all 8 channels. The plug-in modules function in accordance with the linear controller principle, and the outputs have a 2 quadrant operating range (source and sink). Source and sink functions are possible for constant voltage as well as constant current operation. Parallel or series

connection, as well as bridging for the generation of bipolar voltages, is also possible.

- Switchable mains input: 230 V AC / 115 V AC
- Up to 8 independent, electrically isolated outputs
- All outputs can be used as electronic loads as well
- Minimal residual ripple and short response times
- Output on/off function
- Outputs can be activated and deactivated individually or in groups
- Measuring function for voltage, current and power with threshold memory
- Help texts available in various languages by simply pressing a key
- IEEE 488 and RS 232 interfaces

- Easy, flexible device configuration
- Weight: basic device approx. 7.0 kg, modules approx. 3.3 kg each, control module approx. 0.7 kg

Scope of delivery:

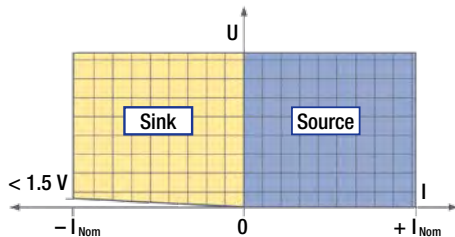
- Basic device including mains power cable with earthing contact plug
- 5 blanking plates for unused module slots
- Installation set for rack mounting

Plug-in power supply modules and control module are not included with the basic device.

See optional accessories beginning on page 91 and optional driver software beginning on page 93.



Characteristic UI Curve



Type	Power	Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. in kg)	Article
	P_{Out} [W]	U_{Set} [V]	I_{Set} [A]	Benchtop Instrument	19" Rack		
MSP 64 N 42 P – basic device				448 x 177 x 390	4 standard height units x 440	7.0	K370A
MSP control module				—	—	0.7	K371A
2 x 24 W	2 x 24	2 x 0...8	2 x 0...±3	—	—	3.3	K372A
	2 x 24	2 x 0...16	2 x 0...±1.5	—	—	3.3	K372B
	2 x 24	2 x 0...40	2 x 0...±0.6	—	—	3.3	K372C
49 W	49	0...7	0...±7	—	—	3.3	K372D
120 W	49	0...30	0...±4	—	—	3.3	K373A
	49	0...80	0...±1.5	—	—	3.3	K373B





SLP 120...320 KONSTANTERs Article: see table

Series SLP 120, 240 and 320 KONSTANTERs (single output laboratory power supplies) are analog controlled, single output, primary switched-mode laboratory power supplies for universal use in R&D, production, training and service applications.

BET circuit technology (bidirectional energy transformation) allows for practically load independent response times.

- Auto-ranging output with 120, 240 or 320 W
- Extremely short response times thanks to BET technology
- Minimal power loss
- Output: voltage and current regulated output
- Dynamic sink mode operation
- Excellent dynamic control parameters

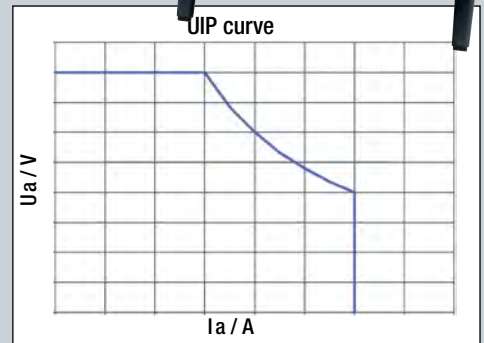
- Minimal residual ripple
- Output on/off function
- Remote sensing
- Master-slave operation for parallel and series connection
- Overtemperature protection
- Floating output terminals at front and rear panels
- Can be electrically and mechanically combined into multi-output devices
- Analog interface

Scope of delivery:

- Basic device including mains power cable with earthing contact plug
- See optional accessories and software beginning on page 91 / 93.



Type	Power	Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. in kg)	Article
	P _{Out} [W]	U _{Set} [V]	I _{Set} [A]	Benchtop Instrument	19" Rack		
120 W	120	0...20	0...10	221.5 x 102.0 x 397.5	½ 19" x 2 standard height units x 400	2.8	K220A
	120	0...40	0...6				K221A
	120	0...80	0...3				K222A
240 W	240	0...20	0...20				K230A
	240	0...40	0...12				K231A
	240	0...80	0...6				K232A
320 W	320	0...32	0...18	K234A			



3-Channel KONSTANTER

Master-Slave Operation

LSP 33K KONSTANTER Article: K270A

The KONSTANTER LSP (laboratory and system power supply) is a compact, linear controlled 3-output device with excellent control characteristics.

It's exceptionally well suited for universal use in R&D, production, training and service applications. Control mode indicators display momentary operating status. The analog interface includes monitor, auxiliary power and programmable signal outputs, as well as trigger and setpoint inputs.

- SELV (safety extra-low voltage)
- Three mutually isolated outputs (at the front panel)
- Constant voltage and constant current operation

- Minimal residual ripple
- Accurate, infinite adjustment of output voltage and current
- Analog interface (for remote control)
- Outputs can be connected for parallel or series operation
- Master-slave operation
- Rugged metal housing with carrying handle, suitable for rack-mounting

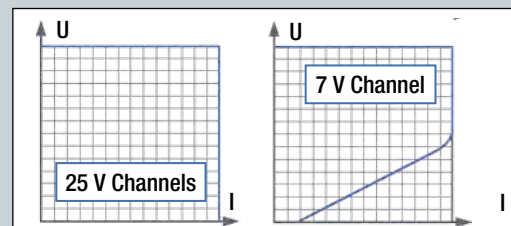
Scope of delivery:

- KONSTANTER with mains power cable



Characteristic UI Curves

Type	Power	Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. in kg)	Article
	P _{Out} [W]	U _{Set} [V]	I _{Set} [A]	Benchtop Instrument	19" Rack		
LSP 33K	25	0...25	0...1	219 x 148 x 365	¾ 19" x 3 standard height units x 343 + 45 mm	8.7	K270A
	25	0...25	0...1				
	35	0...7	0...5				





LSP 32K-KONSTANTER Article: see table

Series 32K LSP KONSTANTERS (laboratory and system power supply) are high precision, single output DC power supplies for use in R&D, production, service and training applications.

LSP KONSTANTERS are distinguished by excellent regulating accuracy and minimal residual ripple, and outstanding ease of operation.

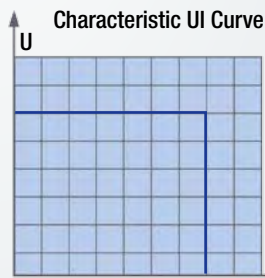
- Floating output
- Safe electrical separation
- Output can be switched on and off
- Voltage and current regulating (square wave)
- Rotary encoder for adjusting voltage and current
- Adjustment is also possible with keys
- Multifunctional LCD panel
- Setup memory for 10 device configurations
- Protective functions
- Compact design, benchtop instrument, suitable for 19" rack mounting

Optional accessories:

- Computer control is possible via RS 232 or RS 485, PC interface upon request

Scope of delivery:

- KONSTANTER



SSL 32EL-KONSTANTER Article: see table

Electrical Load KONSTANTERS

Programmable

SSL series 32EL load KONSTANTERS (single output system load power supplies) are programmable, high precision direct current sinks for use in

R&D, production, service and vocational training.

Load KONSTANTERS are distinguished by a diverse range of functions and excellent regulating accuracy, as well as outstanding ease of operation.

- Floating output
- Safe electrical separation
- Output can be switched on and off
- Characteristic current or R curve can be selected
- Settings selected by means of a rotary switch and keypad
- Multifunctional LCD panel
- Memory for device settings, load profile
- Safety features include, amongst others, adjustable power limiting
- Compact design, benchtop instrument, suitable for 19" rack mounting

Optional accessories:

- Computer control is possible via RS 232 or RS 485, PC interface upon request

Scope of delivery:

- KONSTANTER

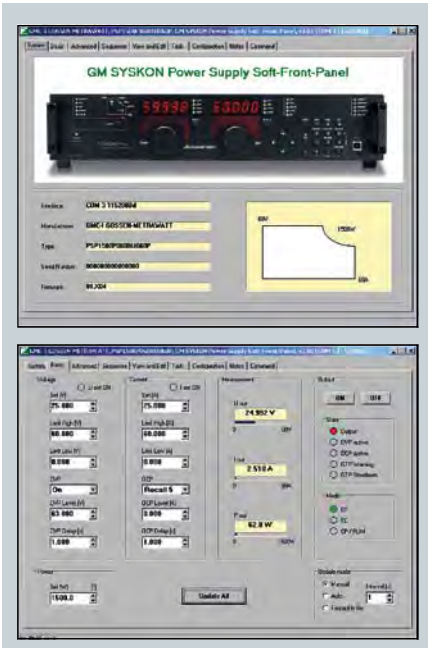


Type	Power	Voltage	Current	Dimensions (W x H x D in mm)		Weight (approx. in kg)	Article
	P _{out} [W]	U _{Set} [V]	I _{Set} [A]	Benchtop Instrument	19" Rack		
LSP 32K	90	0...18	0...5	215 x 100 x 280	1/2 19" x 3 standard height units x 243 + 45 mm	6.0	K110A
	108	0...36	0...3				K111A
	108	0...72	0...1.5				K112A
SSI 32EL 150	150	350	0...30	215 x 100 x 280	1/2 19" x 3 standard height units x 243 + 45 mm	6.0	K850A
SSI 32EL 300	300	350	0...30				K851A



GM SYSKON-SFP

FREE Download



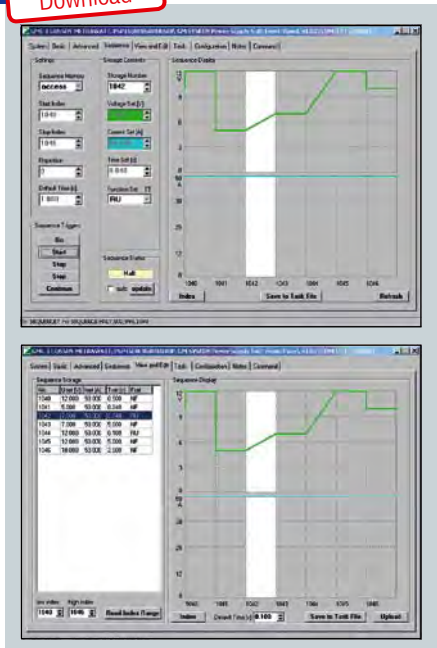
The SFP (soft front-panel) serves as a user interface for all SYSKON KONSTANTERS. All of the SYSKON's functions can be easily configured with this software. Target groups: R&D, production, test equipment fabrication, system manufacturers.

The software is started by running the EXE file; no further installation is required.

The software detects devices which are connected to the various possible interfaces including USB, RS 232 and GPIB.

Devices detected by the software are identified and can be selected. If more than one device is connected, the software can be started several times in order to access them separately.

Usable for:
 ■ SYSKON P series



GM SSP-SFP

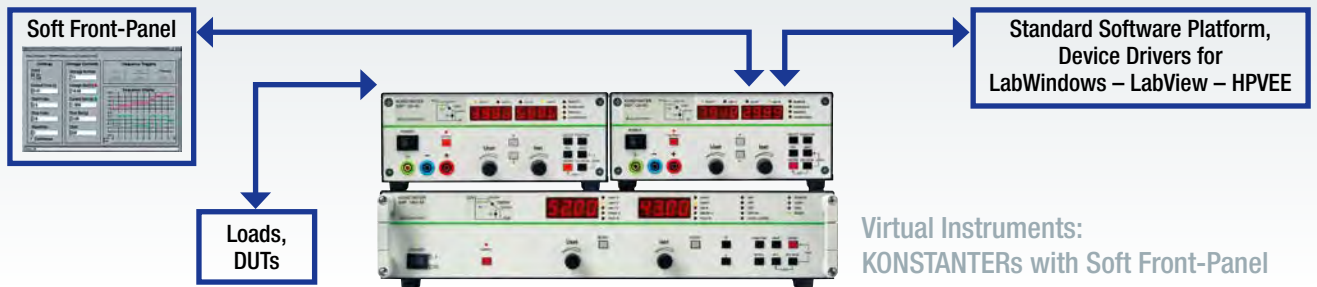
The SFP (soft front-panel) serves as a user interface for all SSP KONSTANTERS. All functions can be controlled and displayed at a PC with this software. Target groups: R&D, production, test equipment fabrication, system manufacturers

Software integrated into our KONSTANTERS facilitates operation and makes it possible to generate automated sequences. An intuitive user interface and device drivers for standard software place all of the functional options of KONSTANTER instruments at the user's fingertips, thus shortening learning curves. As device-specific software, our soft front-panel provides users with the advantages offered by "virtual

instruments" without the need for a complex standard platform. The panel searches for connected devices when it's started. Identified Konstanters are listed, the device to be operated is selected and the required connection is established. Additional devices can be operated and controlled by starting the SFP more than once.

- Prerequisite: NI-VISA driver and additional NI-488.2 driver for control via GPIB must be installed
- Version 2.05 with expanded operating convenience for all SSP Konstanters

Usable for:
 ■ Series SSP 120 ... 320
 ■ Series SSP 500 ... 3000



Virtual Instruments:
 KONSTANTERS with Soft Front-Panel

Drivers for KONSTANTERS

FREE Download

For incorporating our SSP KONSTANTER computer controllable laboratory power supplies or MSP KONSTANTERS into LabWindows, LabView V4/V5 and HPVEE software packages.

- KONSTANTERS can be used ideally with your application.
- KONSTANTER functions are easy to use.
- The drivers support all computer controllable functions.
- A separate directory is created for each application.

Usable for:
 ■ KONSTANTER Series SSP 120 ... 320, SSP 500 ... 3000, MSP 64 D
 LabWindows, LabView V4/V5, HPVEE



Overview Laboratory Power Supplies

Type	Article	Max. Power		Setting Range		Setting Accuracy		Residual Ripple		Interfaces				Sink Mode	Overvoltage Protection	Auto-Ranging Output	Output On/Off	Query Measured Values	Sequence Control
		Dura- tion [W]	< 90 s [W]	U _{set} [V]	I _{set} [A]	U _{set} ± (%+mV)	I _{set} ± (%+mA)	U _{set} [mV _{eff}]	I _{set} [mA _{eff}]	Analog	RS 232	USB	IEEE 488						

Computer Controlled Laboratory Power Supplies

SSP 32 N 20 RU 10 P	K320A	120	(200)	0...20	0...10	0.15+30	0.4+35	10	25	■	■	-	◆	Dyn.	■	■	■	■	■
SSP 32 N 40 RU 6 P	K321A	120	(240)	0...40	0...6	0.15+40	0.5+20	10	20	■	■	-	◆	Dyn.	■	■	■	■	■
SSP 32 N 80 RU 3 P	K322A	120	(240)	0...80	0...3	0.15+80	0.5+10	10	10	■	■	-	◆	Dyn.	■	■	■	■	■
SSP 32 N 20 RU 20 P	K330A	240	(320)	0...20	0...20	0.15+40	0.5+70	15	50	■	■	-	◆	Dyn.	■	■	■	■	■
SSP 32 N 40 RU 12 P	K331A	240	(360)	0...40	0...12	0.15+45	0.5+45	15	25	■	■	-	◆	Dyn.	■	■	■	■	■
SSP 32 N 80 RU 6 P	K332A	240	(360)	0...80	0...6	0.15+80	0.5+25	15	20	■	■	-	◆	Dyn.	■	■	■	■	■
SSP 32 N 32 RU 18 P	K334A	320	(430)	0...32	0...18	0.15+50	0.5+70	30	50	■	■	-	◆	Dyn.	■	■	■	■	■
SSP 62 N 52 RU 25 P	K344A	500	-	0...52	0...25	0.1+17	0.2 + 25	10	15	■	◆	-	◆	Dyn.	■	■	■	■	■
SSP 62 N 80 RU 12.5 P	K341A	500	-	0...80	0...12.5	0.1+20	0.2 + 15	10	15	■	◆	-	◆	Dyn.	■	■	■	■	■
SSP 62 N 52 RU 50 P	K345A	1000	-	0...52	0...50	0.1+17	0.2 + 50	10	25	■	◆	-	◆	Dyn.	■	■	■	■	■
SSP 62 N 80 RU 25 P	K343A	1000	-	0...80	0...25	0.1+20	0.2 + 25	15	20	■	◆	-	◆	Dyn.	■	■	■	■	■
SSP 64 N 52 RU 100 P	K352A	2000	-	0...52	0...100	0.1+17	0.25+100	10	80	■	◆	-	◆	Dyn.	■	■	■	■	■
SSP 64 N 80 RU 50 P	K351A	2000	-	0...80	0...50	0.1+20	0.25+ 50	15	30	■	◆	-	◆	Dyn.	■	■	■	■	■
SSP 64 N 52 RU 150 P	K362A	3000	-	0...52	0...150	0.1+17	0.3 +150	10	120	■	◆	-	◆	Dyn.	■	■	■	■	■
SSP 64 N 80 RU 75 P	K361A	3000	-	0...80	0...75	0.1+20	0.3 + 80	15	60	■	◆	-	◆	Dyn.	■	■	■	■	■
SYSKON P1500-60-60	K353A	1500	-	0...60	0...60	0.05+30	0.05+ 90	6	50	■	■	■	◆	Dyn.	■	■	■	■	■
SYSKON P3000-60-120	K363A	3000	-	0...60	0...120	0.07+48	0.10+135	10	70	■	■	■	◆	Dyn.	■	■	■	■	■
SYSKON P4500-60-180	K364A	4500	-	0...60	0...180	0.10+48	0.15+180	15	100	■	■	■	◆	Dyn.	■	■	■	■	■
MSP 64 D 42 P basic unit	K370A									-	■	-	■						

MSP control module – plug-in modules

ES 31 K 7 R 7 P	K372D	49	-	0...7	0...±7	0.05+ 4	0.1+4	1	3	-	Via basic instrument	■	-	-	■	■	-
ES 32 K 30 R 4 P	K373A	120	-	0...30	0...±4	0.05+16	0.1+2	3	3	-		■	-	-	■	■	-
ES 32 K 80 R 1.5 P	K373B	120	-	0...80	0...±1.5	0.05+40	0.1+1	3	2	-		■	-	-	■	■	-
ES 31 K 2x8 R 3 P	K372A	2x24	-	2x0...8	2x0...±3	0.05+ 4	0.1+2	1	3	-		■	-	-	■	■	-
ES 31 K 2x16 R 1.5 P	K372B	2x24	-	2x0...16	2x0...±1.5	0.05+ 8	0.1+1	1	2	-		■	-	-	■	■	-
ES 31 K 2x40 R 0.6 P	K372C	2x24	-	2x0...40	2x0...±0.6	0.05+20	0.1+0.5	3	2	-		■	-	-	■	■	-

Type	Article	Max. Power		Setting Range		Total System Deviation		Residual Ripple		SELV (safety extra-low voltage)	Analog Interface	Sink Mode	Overvoltage Protection	Auto-Ranging Output	Output On/Off	Front Panel Output	Rear Panel Output
		Dura- tion [W]	< 90 s [W]	U _{set} [V]	I _{set} [A]	U _{set} ± (%+mV)	I _{set} ± (%+mA)	U [mV _{TRMS}]	I [mA _{TRMS}]								

Analog Controlled Laboratory Power Supplies

SLP 32 N 20 R 10	K220A	120	(200)	0...20	0...10	20	28	10	25	■	■	Dyn.	-	■	■	■	■
SLP 32 N 40 R 6	K221A	120	(240)	0...40	0...6	15	15	10	20	■	■	Dyn.	-	■	■	■	■
SLP 32 N 80 R 3	K222A	120	(240)	0...80	0...3	15	15	10	10	-	■	Dyn.	-	■	■	■	■



Overview Continued Laboratory Power Supplies

Type	Article	Max. Power		Setting Range		Total System Deviation		Residual Ripple		SELV (safety extra-low voltage)	Analog Interface	Sink Mode	Overvoltage Protection	Auto-Ranging Output	Output On/Off	Front Panel Output	Rear Panel Output
		Duration [W]	< 90 s [W]	U _{set} [V]	I _{set} [A]	U _{set} ± (%+mV)	I _{set} ± (%+mA)	U [mV _{TRMS}]	I [mA _{TRMS}]								
SLP 32 N 20 R 20	K230A	240	(320)	0...20	0...20	30	38	15	50	■	■	Dyn.	–	■	■	■	■
SLP 32 N 40 R 12	K231A	240	(360)	0...40	0...12	23	38	15	25	■	■	Dyn.	–	■	■	■	■
SLP 32 N 80 R 6	K232A	240	(360)	0...80	0...6	23	20	15	20	■	■	Dyn.	–	■	■	■	■
SLP 32 N 32 R 18	K234A	320	(430)	0...32	0...18	40	50	30	50	■	■	Dyn.	–	■	■	■	■
LSP 33 K7 EU5/2x25 R1 D	K270A	25+25+35	–	2x(0...25)+(0...7)	2x(0...1)+(0...5)	15/15/17	7/7/12	0.5/0.5/0.5	0.5/0.5/2	■	■	–	–/–/–	–	–	■	–

Type	Article	Front Panel Output	U _{Output} [V]	I _{Output} [A]	Setting Resolution		Mains Correction		Load Correction		Analog Interface	Mains Input
					U [mV] at [V]	I [mA]	U % + [mV]	I % + [mA]	U % + [mV]	I % + [mA]		

Linear Controlled Laboratory Power Supplies												
LSP 32 K 18 R 5	K110A	1	0...18	0...5	1 at 0...3.999/5 at 4...18	≤ 1	0.01+3 / 0.02+10	0.02+8	0.02+10	0.02+8	< 2	115/230
LSP 32 K 36 R 3	K111A	1	0...36	0...3	1 at 0...3.999/10 at 4...36	≤ 1	0.01+3 / 0.02+10	0.02+8	0.02+10	0.02+8	< 2	115/230
LSP 32 K 72 R 1.5	K112A	1	0...72	0...1.5	1 at 0...3.999/20 at 4...72	≤ 1	0.01+3 / 0.02+10	0.02+8	0.02+10	0.02+8	< 2	115/230

Type	Article	Load Input at Front Panel	Input Power [max. W]	Current [max. A _{DC}]	Voltage [V]	Current Sink Resolution [mA]	R-Load Curve Resolution [mΩ]	Mains Input [V _{DC}] 50/60 Hz
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Electronic Loads								
SSL 32 EL 150 R 30	K850A	1	150	0...30	350	10	10	115/230
SSL 32 EL 300 R 30	K851A	1	300	0...30	350	10	10	115/230

KONSTANTER Accessories

Accessories for mounting a device to a 19" rack, mains jumper cable with one 10 A inlet plug and one 10 A inlet socket, bus and interface cables.



Type	Designation	Usable for	Article
K990A	Mounting kit 1x32N	SSP 120...320, SLP 120...320	K990A
K990B	Mounting kit 2x32N	SSP 120...320, SLP 120...320	K990B
K991A	Mains jumper cable, 0.4 m	SSP 120...320	K991A
K931A	IEEE–IEEE bus cable, 2 m	SSP 120...320, SSP 500...3000, MSP 64 D	K931A
K931B	RS 232 bus cable, 0.4 m	SSP 120...320	K931B
Z3241	RS 232 interface cable, 2 m	SSP 120...320, SSP 500...3000, MSP 64 D	GTZ3241000 R0001



OEM Power Supplies Panel Mount Power Supplies



i More information at:
www.gossenmetrawatt.com

OEM power supplies for special applications, or in accordance with customer specifications.

In addition to our standard power supply ranges (laboratory KONSTANTERS), we also fabricate power supplies for special applications, or in accordance with customer specifications, for example:

- Fixed voltage switched-mode power supplies in European plug-in module or cartridge format
- 24 to 12V DC-DC voltage converters for commercial vehicles
- Customer-specific power supplies



The photos shown to the right represent part of our OEM program for fixed-voltage power supplies.



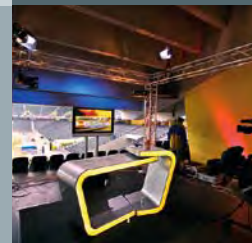
PHOTOMETRY & TEMPERATURE MEASUREMENT

Photometry is an important issue at the workplace today. Investigations have revealed that correct illumination is good for the eyes, and that too much light can be harmful.

Due to the great ability of the human sense of sight to adapt to prevailing conditions, it's practically impossible to estimate illuminance and luminance with the naked eye. Photometric measurements are thus only possible with suitable measuring instruments. Our MAVOLUX 5032 luxmeter measures illuminance, i.e. light

flux which strikes the measuring point in lux or footcandles, and is a class B instrument. Our MAVOMONITOR luminance meter measures light reflected from the measuring point, and is also a class B instrument.

Temperature measurement at a safe distance from the danger zone is becoming more and more important. With its comprehensive features, our METRATHERM 1 contactless infrared thermometer is especially well suited for measurements in repair, manufacturing and monitoring processes.



MAVOLUX 5032 C USB / 5032 B USB Article: M502G / M503G

Precision Digital Measuring Instrument for Measuring Illuminance in Lux (lx) or Footcandles (fc)

Digital luxmeter for inspecting light sources and street illumination, for monitoring the illumination of workstations and public buildings, as well as sports and parking facilities, quality control for light sources, quality assurance for the production of lamps and light fixtures, as well as for agriculture and forestry applications. Very strong light can be measured with these instruments without the use of any accessories.

With a very high initial sensitivity of 0.01 lux, the MAVOLUX 5032 B USB is very well suited for measuring extremely minimal illumination intensities as well, for example emergency lighting. High precision in accordance with class B allows for use in certification applications and for inspection. The instruments can also be used as luminance meters with the help of a luminance attachment; the measuring angle is approx. 20°. Luminance indicates the perceived brightness of a luminous or reflecting surface.

- Precision measuring instrument for measuring illuminance in lux or footcandles
- Measurement of luminance in cd / m^2 or fL by means of accessory luminance attachment; adapter disc for avoiding obliquely incident light
- Large measuring ranges – high resolution – classified in accordance with CIE no. 69
- Color corrected silicon photodiode, i.e. spectral sensitivity is matched to that of the human eye $V(\lambda)$ – the difference between the MAVOLUX 5032 C and the 5032 B is the accuracy of this matching.
- Cosine correction for obliquely incident light
- The instruments are also available with measurement cables in special lengths of 3, 5 or 10 meters for an additional fee (please specify when ordering).



DIN
5032-7


Scope of delivery:

- Carrying case
- CD ROM with gLux software including device drivers
- USB cable
- 1.5V AA battery

Optional accessories:

- Luminance attachment, cd / m^2 und fL (5908V0120)
- Adapter disc (M499G)
- Factory calibration certificate (H997B)

	MAVOLUX 5032 C USB	MAVOLUX 5032 B USB
Units of measure	Lux (lx) or footcandles (fc), luminance with attachment: candelas / m^2 (cd / m^2) or footlamberts (fL)	
Measuring ranges	0.1 ... 199900 lx / 0.01 ... 19990 fc 1 ... 1999000 cd / m^2 / 0.1 ... 199900 fL in 4 ranges	0.01 ... 199900 lx / 0.001 ... 19990 fc 0.1 ... 1999000 cd / m^2 / 0.01 ... 199900 fL in 5 ranges
Class	C per DIN 5032-7	B per DIN 5032-7
Display	3½ place LCD	3½ place LCD with background illumination
Receiver	Silicon photodiode with V (λ) filter	
Memory / sampling rate	100 individual measured values / 2 measurements per second	
Interface	USB 1.1	
Operating / storage temperature	0 °C ... + 50 °C per EN 61010-1: 2001, section 1.4.1 / -20 °C ... + 70 °C	
Power supply	1.5V AA (IEC LR 6)	
Software	gLux and other applications	
Measurement cable	Permanently attached cable, 1.5 m long	Plug-in cable, 1.5 m long
Dimensions / weight	Measuring instrument: 65 x 120 x 19 mm, probe: 31 x 105 x 30 mm / weight: approx. 200 g without battery	

GOSSEN
Foto- und Lichtmesstechnik GmbH

Please send RFQs,
orders and requests for
additional information to:



 GOSSEN METRAWATT

MAVOMONITOR USB Article: M504G

Luminance Meter for Class B Contact Measurement

Precision digital measuring instrument for measuring luminance. In direct contact with self-luminous and transilluminated surfaces such as monitors (CRT / LCD background illumination), TV screens, light tables, trough luminaires, illuminated advertising surfaces, traffic signs and viewing screens.

A handy, special measuring instrument for professional use in industrial, commercial and service applications, for special approvals testing and inspection in accordance with existing safety regulations for example, and above all, at workstations with monitor screens, and in the fields of medical engineering and office technology.

- Precision measurement of luminance classified per DIN 5032-7 class B, and EN 13032-1 appendix B
- The silicon photodiode is color corrected, i.e. its spectral sensitivity is matched to that of the human eye in daylight V(l).
- Measurement of luminance in cd/m² or fL
- Adapter disc for avoiding obliquely incident light
- Automatic and manual measuring range selection

Scope of delivery:

- Carrying case
- CD ROM with gLux software including device drivers
- USB cable
- Adapter disc
- 1.5V AA battery

Optional accessories:

- Factory calibration certificate (H997B)



MAVOMONITOR USB	
Measuring methods / units of measure	Contact measurement, measuring area: 6.5 x 6.5 mm / either candelas / m ² (cd / m ²) or footlamberts (fL)
Measuring ranges	0.01 ... 19990 cd/m ² or 0.001 ... 1999 fL in 4 ranges, automatic and manual measuring range selection
Class	B per DIN 5032-7 and DIN EN 13032-1, appendix B
Display	3½ place LCD with background illumination
Receiver	Silicon photodiode with V (λ) filter (f1 < 3%)
Memory / sampling rate	100 individual measured values / 2 measurements per second
Interface	USB 1.1
Operating / storage temperature	0 °C ... + 50 °C per EN 61010-1: 2001, section 1.4.1 / -20 °C ... + 70 °C
Power supply	1.5 V AA (IEC LR 6)
Software	gLux and other applications
Measurement cables / miscellaneous	Plug-in cable, 1.5 m long / tripod mounting thread
Dimensions / weight	Measuring instrument: 65x120x19 mm, probe: 31 x 105x30 mm / weight: approx. 265 g without battery

GOSSEN Foto- und
Lichtmesstechnik GmbH
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www.gossen-photo.de

METRATHERM I 1 Article: M680A

Contactless Infrared Thermometer with Laser Pointer and Data Logger Software for Temperature Measurement at a Safe Distance from the Danger Zone

For repairs and maintenance work in the automotive industry and in air conditioners, for scientific experiments, manufacturing processes in the field of semiconductor technology, contacts in electrical control cabinets, and food monitoring and processing

- Infrared temperature measuring range: -50 ... 1000 °C (-58 ... 1832 °F)
- Exact positioning with laser sighting (can be activated if desired)
- High D:S ratio of 50:1
- Emissivity adjustable from 0.1 to 1.00 in steps of 0.01
- Additional contact measurements with type K thermocouple
- Selectable unit of measure: °C or °F
- Individual / continuous measurement, 10 memory locations for individual measurements
- Storage of currently measured temperature, lowest and highest temperature or maximum temperature difference ΔT
- Illuminated LCD panel
- Alarm function: acoustic signal if selectable limit values are exceeded or fallen short of
- USB port for data transmission to a PC

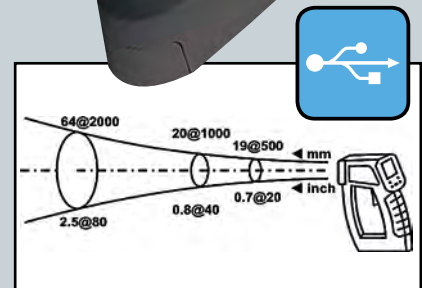
- Software for displaying and recording measured values (data logger)

Software included for:

- Display of measured infrared temperature values with date and time
- Adjustment of the sampling interval for recording measured values
- Recording of measured values to a text file which can be exported to Microsoft Excel for evaluation























Scope of delivery:

- Carrying strap
- Type K thermocouple
- USB adapter cable
- 9V battery per 6LR61
- CD ROM with installation program for PC display and recording program



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E-Clip I1 / E-Clip I2.....	51	METRAmax 2.....	13	SECUTEST I PSI.....	55
EL1.....	73	METRAmax 3.....	13	SECUTEST I SI.....	55
ETC.....	78	METRAmax 6.....	13	SECUTEST S2N+ / SECUTEST S2N+ I10.....	64
Flexible Current Sensors.....	24	METRAMAX I12.....	12	SECUTEST I SIII+ / SECULIFE I ST.....	65
Generator 5000 A.....	49	METRAOHM 413.....	46	SECUTEST I SI / SECUTEST I PSI.....	71
GEOHM 5.....	50	METRAPHASE I1.....	57	SECUTEST I WP.....	70
GEOHM C.....	50	METRAport I3A.....	13	SECU-UP.....	78
GM SSP-SFP.....	91	METRAport I40S.....	11	Shunts.....	22
GM SYSKON-SFP.....	91	METRATESTER I5+3P.....	69	SK2/SK5.....	74
Guard 5000 A, Leadex 5000.....	49	METRATESTER I5+.....	67	SLP 120...320 KONSTANTERs.....	89
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IrDa-USB Converter.....	53	METRAVOLT 12D +L.....	57	SP350.....	51
ISO KALIBRATOR 1.....	48	METRAVOLT 12D +L.....	57	SSL 32EL-KONSTANTER.....	90
Kelvin Clips.....	29	METRAwin 10/METRAHit.....	31	SSP 32N KONSTANTER 120...320.....	86
Kelvin Probes.....	29	METRAwin 90-2.....	30	SSP 62N/64N KONSTANTER 500...3000.....	87
KONSTANTER Accessories.....	93	METRAwin 90-F.....	30	Starter Package.....	64
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KS24 Cable Set.....	52	METRISO® 500 D/1000 D/ 1000 IR/1000A.....	47	Telearn 1.....	53
KY 5000 A.....	49	METRISO® 5000 A.....	48	Temperature Probes.....	26
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Measurement cable.....	52	MSP 64D KONSTANTER.....	88	VARIO Plug Adapter Set.....	53
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METRACLIP 41 / 410.....	58	OEM Power Supplies.....	94	WR50-12/13/12R/13R.....	62
METRACLIP 61.....	58	PA4.....	75	Z3409 Temperature Sensor.....	75
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Recommended Workshop Equipment in Accordance with ZVEH and VDEW Guidelines

Required Measuring and Test Instruments	Per Standard	For First-Time Users	Standard	For Efficient Work
Test bay with permanently integrated measuring instruments	DIN VDE 0104	 METRATESTER 5+3P	 SECUTEST 21F	 METRATESTER 5+3P/VL2E
Measuring instruments for electrical devices	DIN VDE 0701–0702		 METRATESTER 5+	 SECUTEST S2N+ with SI module
Voltage meter to at least 600 V Current meter to at least 15 A (continuity tester)	DIN VDE 0410 DIN VDE 0410 DIN VDE 0403	 METRAHIT 2+ with WZ12A current transformer clamp	 METRAHIT PRO with WZ12D current transformer clamp	 METRAHIT X-TRA with Z3512 current transformer clamp
Current clamp to at least 300 A	—	 METRACLIP 61	 METRACLIP 70	 METRACLIP 70
Insulation measuring instrument Test instrument for RCCBs Ohmmeter Loop resistance measuring instrument Phase sequence indicator	DIN VDE 0413, part 2 DIN VDE 0413, part 3 DIN VDE 0413, part 4 DIN VDE 0413, part 6 DIN VDE 0413, part 7	 PROFITEST 2	 PROFITEST MTECH	 PROFITEST MTECH
Earth tester	DIN VDE 0413, part 5		 GEOHM C	 GEOHM C
Single-pole voltage tester 2-pole voltage tester	DIN VDE 0680, part 5 DIN VDE 0682, part 401	 ProfiSafe 400	 Duspol digital LC	 METRAVOLT 12D+L
Continuity tester	DIN VDE 0403		 ProfiSafe 400	 ProfiSafe 690
Illuminance meter	DIN VDE 5032		 MAVOLUX 5032C	 MAVOLUX 5032B

MEASURING INSTRUMENTS AND TESTERS

Measuring Systems for Medical Technology

- Function Testers
- Safety Testers
- Light Analyzers
- Modular Test System



Measuring Technology – Universal

- Mains Quality – Energy – Power
- Field Measuring Systems, Cable Detection Devices
- Resistance Thermometers / Clamp-Type Measuring Instruments
- Digital Multimeters
- Analog Multimeters
- Multimeter Accessories
- Calibrators
- Temperature Measuring Instruments, Light Meters

Testing Technology – Electrical

- Facility Management Solutions
- Installations and Equipment Testing (permanently installed)
- Electrical Device Testing (portable)
- Electrical Machinery Testing
- Earthing, Insulation, Low-Resistance
- Workshop Test Panels
- AS Interface Test Instruments

Power Supply Technology

- Laboratory Power Supplies
- Electronic Loads
- Customer-Specific OEM Power Supplies

Software for

- Measuring Instruments – Testers – Power Supplies

INDUSTRIAL MEASURING AND CONTROL TECHNOLOGY

Measuring Technology – Industrial

- Meas. Transducers for Temperature and DC Quantities
- Meas. Transducers for Heavy Current Quantities
- Measuring Transducers for Angle of Rotation and Position
- DC Signal Isolators, Isolating Transformers
- Power Packs, Mounting Racks
- Isolating Switch Amplifiers, Isolating Amplifiers
- Valve Control Modules, Limit Value Indicators
- Thermocouples, Resistance Thermometers
- Ex-i Equipment

Energy Management

- Energy Meters, Summators, Additional Components
- Power – Energy – Mains Quality – Load Optimization
- ECS – Energy Control System
- Energy Management – Engineering
- Competent Project Management Partner

Control Technology

- Compact Controllers, Multi-Channel Control Systems
- CoDeSys and PC Worx Software Controllers
- Controller Modules for the Siemens S7-300

Recording Technology

- Display Recorders
- Continuous Line Recorders
- Point Recorders

Software for

- Energy Control System – Measuring Transducers – Isolating Amplifiers – Controllers



Further information about our company is available at www.gossenmetrawatt.com

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